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VOL. XXXIX. No. 153. JANUARY, 1930.

MIND

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY.

EDITED BY

PROF. G. E. MOORE,

WITH THE CO-OPERATION OF F. C. BARTLETT, M.A., AND C. D. BROAD, LITT.D.

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MIND

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY

I.—LOCKE'S VERSION OF THE DOCTRINE OF REPRESENTATIVE PERCEPTION.

BY REGINALD JACKSON.

THIS is an attempt to carry out a programme to which I seem in the course of my article on "Locke's Distinction between Primary and Secondary Qualities"[1] to have committed myself. The aim of that article was to challenge, on the ground that it conflicted with Locke's definitions of his terms, the tradition, established by Berkeley, which interprets the distinction as one between two groups of sense-data, namely, sensible qualities of bodies and sensible ideas which are mistaken, by the unsophisticated consciousness, for qualities of bodies, but which do not really exist independently of the sensing of them. An alternative interpretation was advocated, according to which Locke recognises Primary Qualities, Secondary Qualities, and Ideas of Sensation (including both Ideas of Primary Qualities and Ideas of Secondary Qualities) as three distinct groups of entities. By Primary Qualities Locke was said to mean qualities in the strict sense, contrasted with relations in belonging to a body in itself at least momentarily, and it was held that no Primary Qualities are sensible. By Secondary Qualities Locke was said to mean, not a kind of qualities, but a kind of relations, namely powers of bodies, dependent on their determinate Primary Qualities, to produce Ideas of Sensation in the mind of a percipient whose body is suitably situated. Ideas of Sensation were said to be the only sense-data, all of them numerically distinct from

[1] MIND, vol. xxxviii., N.S., No. 149.

qualities of bodies. Accordingly, no difference was admitted between the ontological status of Ideas of Primary Qualities and the ontological status of Ideas of Secondary Qualities. On the contrary, it was claimed that of all Ideas of Sensation, if of any, Locke shares Berkeley's opinion that their *esse* is *percipi*.[1] That this interpretation modified Locke's definitions of his terms in some important particulars was admitted; but an attempt was made to vindicate such modification as seemed inescapable, by reference to Locke's habitual use of the terms and to the exigencies which might have led him, in spite of the way in which he used them, to define them as he did.[2]

[1] See below, p. 18, note.

[2] The article was not concerned with the history of either the terms or the distinction itself. As I find, however, that I have stated that Boyle "was really the author not only of the terms but also of the distinction itself", I take this opportunity of saying that, though the terms, Primary and Secondary Qualities, had been previously used, they had not been previously—to judge by the citations of Hamilton and Baeumker—used in this sense. It must also be admitted that, though the distinction itself was not that said to have been drawn by Democritus, between what in Locke's terminology would be "primary qualities of insensible parts" and "ideas of secondary qualities," the peculiar feature of Locke's distinction was anticipated by Aristotle's distinction between *παθητικαὶ ποιότητες* and *πάθη*, which corresponds to Locke's distinction between "secondary qualities" and "ideas of secondary qualities" (Hamilton's *Reid*, pp. 826-827), while Locke's distinction between "ideas of primary qualities" and "ideas of secondary qualities" appears to correspond to Aristotle's distinction between *αἰσθητὰ κοινὰ καὶ ἴδια* (*ibid.*, pp. 828-830).

That Locke's Secondary Qualities are not sense-data but powers, was noticed by Hamilton (p. 839*b*) and recently by Baeumker in his article "Zur Vorgeschichte zweier Lockescher Begriffe" (*Archiv für Geschichte der Philosophie*, 1907-08). Baeumker seems, however, to have thought that Boyle did not anticipate Locke on this point. The Secondary Qualities are, he says, "bei Locke nicht, wie bei Boyle, die 'Ideen,' d.h. die Sinnesinhalte selbst; vielmehr versteht er darunter die realen Kräfte in den Dingen, welche jene Ideen bewirken, ihnen aber unähnlich sind" (p. 515, *cf.* pp. 507, 510). Erdmann, while citing Baeumker, seems not to have himself distinguished between Secondary Qualities and sense-data (*Berkeleys Philosophie im Lichte seines wissenschaftlichen Tagebuchs*, p. 44). Cook Wilson, in his "Letter in criticism of a paper on Primary and Secondary Qualities," July, 1904 (in *Statement and Inference*, vol. ii., pp. 764-800), also notices (p. 764) that "the secondary qualities, which are qualities of the external object, are strictly speaking not the sensations . . . but the powers in the object to produce the sensations".

The criticism of Berkeley's argument that the primary qualities "are inseparably united with the other sensible qualities" (p. 72 of previous article) is confused, owing to my having first directed it against the argument, erroneously ascribed to Berkeley, that the primary qualities are inseparably united with the *Secondary Qualities*, and having at the last moment corrected the quotation without observing that the correction

But the article claimed further that Locke's distinction between Primary and Secondary Qualities, if interpreted in accordance with the Berkeleian tradition, is awkwardly related to his distinction between Qualities and Ideas, not only being rendered redundant, as a distinction between physical reality and sensible appearance, by the distinction between Qualities and Ideas, but also, in view of the different standpoint from which the distinction between physical reality and sensible appearance is drawn, being incompatible with the distinction between Qualities and Ideas. This claim assumed that Locke's distinction between Qualities and Ideas was an embodiment of the doctrine of Representative Perception. Now this assumption is not beyond controversy. If a commentator interprets Locke's distinction between Primary and Secondary Qualities in such a way as to imply that Locke did not hold the doctrine of Representative Perception, he may be prepared to acknowledge and defend this implication. Campbell Fraser did explicitly defend it in the face of the contrary interpretation of Hamilton, and his view has not been, so far as I know, subjected to criticism. For, although both Dr. Alexander [1] and Professor Gibson [2] have expounded Locke's view of our knowledge of the external world as a version of the doctrine of Representative Perception, they have neither directly challenged, nor endeavoured to refute, the Berkeleian tradition. In fact this tradition seems easily to be overlooked. For Reid, who always treated Locke as an exponent of the doctrine of Representative Perception, and even went so far as to claim that "all philosophers, from Plato to Mr. Hume, agree in this, That we do not perceive external objects immediately, and that the immediate object of perception must be some image present to the mind",[3] not unnaturally supposed that "Berkeley's

rendered the criticism inapplicable. It is, however, true that Berkeley uses "sensible quality" as a term covering both what he calls primary and what he calls secondary qualities, and he would have been prepared to accept, as an equivalent contention, Bradley's claim that "without secondary quality extension is not conceivable" (*Appearance and Reality*, p. 16).

On p. 57 the view that Locke thought primary qualities were sensible, is wrongly ascribed to Reid, as well as to Berkeley, instead of only to Berkeley. Reid, so far as I know, never treats Locke as other than a thorough-going Representationist, and his interpretation of Locke's distinction between Primary and Secondary Qualities is at variance with that of the article only in his failure to distinguish between "secondary qualities" and "ideas of secondary qualities".

[1] *Locke*, in the series "Philosophies, Ancient and Modern".

[2] *Locke's Theory of Knowledge* (especially pp. 130, 172 *et seq.*, 222 *et seq.*).

[3] Hamilton's *Reid's Works*, 4th ed., p. 263*a* (all refs. to both Hamilton and Reid, are to this edition).

system follows from Mr. Locke's, by very obvious consequence "[1] and that "a man who was firmly persuaded of the doctrine universally received by philosophers concerning ideas, if he could but take courage to call in question the existence of a material world, would easily find unanswerable arguments in that doctrine ".[2] But Reid allows his own just view of the relation between Locke's position and Berkeley's thesis to blind him to the fact, that Berkeley did not recognise the full extent of the admission which Locke had made, but supposed that the view of Locke had first to be modified by proving that Locke's view of "certain sensible qualities", namely that they "have no existence in matter, or without the mind", is true "of all other sensible qualities whatsoever", before it could be made to agree with the doctrine of Representative Perception.[3] Since the Berkeleian tradition seems not to have been refuted and since Campbell Fraser revived the view that Primary Qualities are "called ideas in the mind, at one point of view, phenomena presented by the thing, at another",[4] the assumption made in the previous article about the nature of Locke's distinction between Qualities and Ideas requires vindication. Its defence involves questions, the discussion of which would have been disproportionate if presented as an incident in the course of an investigation of the distinction between Primary and Secondary Qualities; and so its defence was not attempted in the previous article. This omission the present article will try to make good. The title is polemical, since what has to be attempted is to prove that Locke's view of our knowledge of the external world is a version of the doctrine of Representative Perception, and not, assuming this, to inquire in what form Locke held that doctrine.

In the attempt to support this thesis, it will be assumed that there are only two alternatives open to an interpreter of Locke's view of our knowledge of the external world. These alternative interpretations can be advantageously viewed as successive stages in a process of departure from Näif Realism, common sense being supposed to be "naïvely realistic wherever it does not think that there is some positive reason why it should cease to be so".[5] In Locke's terminology Näif Realism would be expressed by saying that all "simple ideas of sensation", that are presented "when our senses are actually employed about any object",[6] are qualities of bodies. Now nobody thinks that

[1] P. 287*a*. [2] P. 282*b*. [3] *Cf.* previous article, p. 72.
[4] Fraser's edition of Locke's *Essay*, vol. i., p. 178.
[5] Broad, *Perception, Physics, and Reality*, chap. i.
[6] *Essay* IV., xi., 11.

Locke held this view, it being generally agreed that not only philosophy and science, but even common sense, have reasons for refusing to identify certain " simple ideas of sensation " with any qualities of bodies. If one who has advanced so far neither recognises that the remaining " simple ideas of sensation " are exposed to similar objections nor perceives any inconsistency in assigning to each of two groups of " simple ideas of sensation " a different ontological status, the resultant view will be what may be called the Mixed View. This, unlike Naïf Realism, draws a distinction between appearance and reality, and the distinction falls between two groups of " simple ideas of sensation ". If, however, it is seen either that those " simple ideas of sensation," which the Mixed View declares to be qualities of bodies, are exposed to direct attack in the same way as those which the Mixed View pronounces to be appearances, or that the withdrawal from physical reality of the one group involves the withdrawal of the other group, the resultant view will be the doctrine of Representative Perception. This agrees with the Mixed View in drawing a distinction between appearance and reality, but the distinction now falls not between two groups of " simple ideas of sensation " but between all " simple ideas of sensation " and all qualities of bodies, so that one can speak of sensible appearance and physical reality as mutually exclusive. It agrees with Naïf Realism only in assigning to all " simple ideas of sensation " a common ontological status. The Mixed View is naïvely realistic with respect to some " simple ideas of sensation " and representationist with respect to others. It is the Mixed View which is attributed to Locke by Berkeley and by Campbell Fraser, and it is the doctrine of Representative Perception which is attributed to him by Reid and Hamilton and by Dr. Alexander and Professor Gibson.

On the assumption that these alternatives are exhaustive, it will still appear that, so far from needing no vindication, the thesis that Locke held the doctrine of Representative Perception is probably incapable of being conclusively proved, and must in any case be stated in carefully guarded terms. The difficulty is occasioned in part by the character of Locke's writings and in part by the peculiar relation between the two views that have been attributed to him.

For, to take the latter source of difficulty first, what has to be shown is that Locke accepted the doctrine of Representative Perception without any reservation in favour of Naïf Realism, and this has to be shown in the face of the claim that Locke's view was constituted in part by the doctrine of Representative

Perception and in part by Naïf Realism. Now there is no doubt that Locke not only occasionally, but even habitually, uses the language of Naïf Realism, and this admission might be supposed, if coupled with the claim that Locke sometimes uses the language of the doctrine of Representative Perception, to be tantamount to the recognition of the rival interpretation.

In order to avoid misunderstanding in this matter, it will be necessary to distinguish two references in which a writer may be said to be inconsistent. The charge sometimes means that what is put forward by the writer as a single view is really made up of conflicting propositions. In this sense Kant would be said by many commentators to be inconsistent, in his argument that only objects of possible experience can be known, on the ground that the Subjective Deduction of the Categories is an indispensable part of the argument and that its claims to insight into the conditions which determine experience are incompatible with what Kant is trying to prove. But sometimes the charge means that, even if the writer does put forward an internally consistent view, he at times makes statements which conflict with one or more of the propositions which constitute his view. In this sense Kant would be said to be inconsistent in holding different views of the nature of Time in the Transcendental Æsthetic and in the Transcendental Analytic. If this kind of inconsistency is called *inconstancy*,[1] the term *inconsistency* may be restricted to the former kind. Now it is clear that inconstancy may involve inconsistency. Whether it does so or not depends on whether the occasions of inconstancy can be revised without prejudice to the view with which they conflict, and in the case of Kant's conflicting views about Time commentators disagree in their findings on this question. But it is also clear that inconstancy does not necessarily involve inconsistency; for the occasions of inconstancy may—where due to negligence or to the influence of habits formed before the central view was worked out—be readily amendable. Now, in terms of this distinction it may be said that what has to be shown is that Locke was a *consistent* Representationist, not that he was a *constant* Representationist. He is at times a Naïf Realist and possibly also at times he holds the Mixed View, but he does not in general hold a view which is made up of tenets selected from Naïf Realism and from the doctrine of Representative Perception.

But the admission that Locke is not a constant Representationist involves the other source of difficulty, which is the necessity

[1] A term used by Locke (*Essay*, III., x., 5), to denominate vacillation in the use of words.

of deciding which of the admittedly conflicting passages are the occasions of inconstancy. This difficulty is present in some degree whenever a commentator is engaged in interpretation as distinguished from criticism, in discovering what a writer means as distinguished from estimating the truth of his view. For the attempt to reveal what a writer means—unless it is mere explanation—presupposes that he does not always succeed in saying what he means, and that it is necessary in order to discern his 'real meaning' to reject or amend the passages in which he fails to express it. Now there may be no difficulty in showing that some passages in a philosophical work conflict with others, and no inconsequence in claiming that, inasmuch as the writer cannot be supposed to have intended to contradict himself, some at least of the conflicting passages do not express his 'real meaning'. But there remains the difficulty of selecting the passages which do express it. Moreover, since a writer presumably means what he says, at least at the moment at which he says it, it is necessary to vindicate and explain any reference to a 'real meaning'.

This difficulty is met by some commentators, who proceed on the Hegelian plan of treating all previous philosophies as imperfect expressions of the one true philosophy, by selecting from the treatise which they are professedly interpreting whatever passages seem to them most promising, and setting these down as the embodiment of the writer's 'real meaning'.[1] But, whatever may be the value of this proceeding, (and its value may be incalculable), it seems to be something more than interpretation. It seems clear, for example, that two people may dispute about the question whether Locke really held the Mixed View or the doctrine of Representative Perception, and that this question is distinct from the question which of the two views ascribed to him approximates the closer to the truth.

Perhaps the most satisfactory significance that can be given to the term 'real meaning' is given by defining it as the doctrine

[1] *Cf.* Caird, *Critical Philosophy of Kant* (Preface), for the view that "the only valuable criticism is that which turns what is latent in the thought of a great writer against what is explicit, and thereby makes his works a stepping-stone to results which he did not himself attain" and that "to understand [Kant] . . . is to detect a consistent stream of tendency which, through all obstruction, is steadily moving in one direction; to discern the unity of one mind which, through all changes of form and expression, is growing towards a more complete consciousness of itself". Whether or not Kant can be satisfactorily expounded in this way, it seems necessary, when dealing with a writer in whom one cannot "detect a consistent stream of tendency which, through all obstruction, is steadily moving in one direction", to distinguish between interpretation and criticism.

which a writer would have selected if his attention had been drawn to the conflicting passages.[1] In order to show that such a claim in behalf of any doctrine is probable, two points must be established. It must be shown that the passages which the interpreter prefers really do embody the doctrine; and it must also be shown that the conflicting passages, although they contradict the doctrine, can fairly be supposed to have been written, under the influence of certain factors, by one who would have surrendered them if he had been aware that they were likely to obscure the doctrine. But, even if these points can be established and if, as is obviously requisite, there is no other doctrine for which a similar case can be presented, the argument could hardly be allowed to prove that so vacillating a writer as Locke would have submitted to the proposed interpretative surgery. In view of this uncertainty it seems best to limit the thesis of this article to the contention that the doctrine of Representative Perception is certainly embodied in some passages of the *Essay;* that there were strong influences which might be fairly supposed to have led Locke, especially if he had never contemplated the Mixed View as a possible alternative to the doctrine of Representative Perception and so was not apprehensive of misunderstanding, to use the language of Naïf Realism on almost all occasions and especially with reference to the Ideas of Primary Qualities; and that it is difficult to understand how Locke could, on the supposition that he really intended the Mixed View, have come to write the passages which embody the doctrine of Representative Perception. Of these three claims, the last can hardly be argued until an explanation of the conflict, on the hypothesis that Locke held the Mixed View, is forthcoming. The argument will therefore be confined mainly to the first two claims.

The first of these claims, namely, that the doctrine of Representative Perception is certainly embodied in some passages, has to be made out in the face of the fact that those very passages, which according to this claim can only be an expression of that doctrine, have been regarded by Campbell Fraser as an expression of the Mixed View, and have been admitted by Hamilton to be unhappily worded. Commenting on Locke's statement that "the ideas of primary qualities of bodies are resemblances of them, and their patterns do really exist in the bodies themselves",[2] Fraser says, "This implies that what we are directly percipient of, *i.e.* the idea, belongs, in the case of the real or primary qualities

[1] *Cf.* Hamilton (p. 820) on the interpretation of Reid.
[2] II. viii. 15.

of sensible things, to the things themselves, being *body itself manifested*, so far as a percept *can* present what is extended."[1] And Hamilton finds it necessary to "modify the obnoxious language," and maintains that Locke's meaning would be better expressed if we "instead of saying that the ideas or notions of the primary qualities *resemble*, merely assert that they *truly represent*, their objects, that is, afford us such a knowledge of their nature as we should have were an immediate intuition of the extended reality in itself competent to man".[2] In the hope of showing that Locke's language neither implies what Fraser says nor requires the modification which Hamilton prescribes, it will be better to consider the Mixed View and the doctrine of Representative Perception at first, not in the form in which Locke would have had to hold them, but in the form which they assume when stated in terms of the current view that what is sensed is not a "simple idea" but a complex sensum which,

[1] I., p. 173.

[2] P. 842*a*. Fraser seems to have supposed that in this passage Hamilton is conceding his view that "Locke treats primary qualities as 'real', or 'perfectly resembling the real', and virtually 'the same'; but called ideas in the mind, at one point of view, phenomena presented by the thing, at another" (*Essay*, I., p. 178). His supposition is apparently due to Hamilton's statement that, if the "obnoxious language" were modified as he suggests, "Reid's doctrine and theirs [not "his" as Fraser quotes. Hamilton is referring not to Locke only, but to Descartes and Locke] would be found in perfect unison". But, while Hamilton regards both Descartes and Locke as exponents of the doctrine of Representative Perception, he thinks that Reid's "intended" doctrine of perception, "one of *immediate* cognition, under the form of *real presentationism*", is obscured by many statements appropriate to "one of *mediate* cognition under the form of *egoistical representationism*" (p. 820*a*). Accordingly, in saying that "Reid's doctrine touching the present distinction [that between Primary and Secondary Qualities] corresponds, in all essential respects, with that maintained by" Descartes and Locke (pp. 841-842), he is suggesting that the agreement consists in the acceptance not of a "form of real presentationism", but of a "form of egoistical representationism" which "rejected all representative entities different from the act itself of cognition" (p. 842*a*). His objection to Locke's language is not that it implies "representationism" but that it implies, he thinks, a crude form of "representationism". Hence he says that "the whole difficulty and dispute on this point is solved by the old distinction of *similarity in existence*, and *similarity in representation*" (p. 842*a*), which I take to imply that Locke should have said that the "idea" is similar, in its character as a representation, to the "quality," but that "idea" and "quality" are different in existence. Since Locke is clearly using "idea" to denote a content sensed and not an act of sensing, his language does not seem to need the modification which Hamilton proposes. But it may be admitted that Locke does not face the problem of the ontological status of "ideas of sensation".

though not recognised by the act of sensing as possessing qualities, is recognised as possessing qualities when judgment supervenes upon the act of sensing. Then, when the formulæ appropriate to the doctrine of Representative Perception have been examined, the effect, if any, of Locke's different analysis of the perceptual situation can be taken into account.

Of the Mixed View and of the difference between it and the doctrine of Representative Perception, Dr. Broad has given an account in his chapter on "The Theory of Sensa" in *Scientific Thought*.[1] He there contrasts what he holds to be "involved in the common scientific view of physical objects and their sensible appearances"[2] or "what the average person with a scientific training believes"[3] with what he calls the "Critical Scientific Theory", which is "an attempt to formulate clearly, in terms of the Sensum Theory of sensible appearance, the view about the external world which has been at the back of the scientific mind since the time of Descartes and Locke".[4] The aim of each view is "to assert the *physical* reality of shapes and sizes, and to deny the *physical* reality of colours, temperatures, noises, etc.".[5] But, while the crude view maintains that the physically real qualities are sensible and that the surfaces to which they belong are sensible, the more developed view denies that any physically real qualities are sensible and holds that the physically real qualities can be determined only by inference from physically unreal qualities, to which they are causally related and some of which resemble them. Dr. Broad contends that the Mixed View is inconsistent both with itself and with the facts.[6] It is internally inconsistent because it by implication both affirms and denies that what we sense are surfaces of bodies, by affirming that sensible shape is physically real and yet denying that colour is physically real.[7] It is inconsistent with the facts because the argument, based on variation of sensible qualities where the object body is supposed to undergo no change, which has been used to prove the physical unreality of some sensible qualities, has the same force when stated with reference to the supposedly physically real sensible qualities. It is an attempt to combine a naïvely realistic view of some sensible qualities with a "causal theory" of others, and it is necessary "to restate it in a completely causal form".[8]

When so restated the Mixed View is superseded by the doctrine of Representative Perception. It will be convenient to formulate the doctrine of Representative Perception in terms of a negative

[1] Pp. 272-283. [2] P. 272. [3] P. 273.
[4] Pp. 281-282. [5] P. 279. [6] Pp. 273-274.
[7] This is not quite the same as Broad's argument. [8] P. 282.

and a positive tenet. The negative tenet is that no physical reality is sensible. In current terminology this may be expressed by saying that no sensa are parts of bodies, and, on one view of the nature of a quality, it will follow that no sensible qualities are qualities of bodies. The positive tenet is that there is a physical reality and that it is represented [1] by sensible appearance. The statement that sensible appearance *represents* physical reality does not *mean* that sensible appearance *resembles* physical reality. But the statement can be defended only on the supposition that sensible appearance does resemble physical reality, since otherwise an exponent of the doctrine would be unable to give any account of the nature of physical reality, even to the extent of pronouncing it to be spatial. Nevertheless, all that is *meant* by saying that sensible appearance represents physical reality is that the apprehension of sensible appearance serves the percipient instead of the apprehension of physical reality. Thus the sensing of colour may lead the percipient to select appropriate food. The power of the food to produce a certain effect upon the body of the percipient is, according to Locke, conditioned by some of the determinate primary qualities of the food ; and the secondary quality, or power to produce sensible colour, is also conditioned by some of the determinate primary qualities of the food. If, instead of sensing the colour, we sensed the determinate primary qualities by means of which the food produces the colour, we should, by associating these qualities with the power to produce a certain effect upon our bodies, be able equally well to select appropriate food. Locke seems sometimes to think that if we could sense the primary qualities, including the so-called "qualities of the insensible parts", we should, instead of waiting on experiment, be able to predict the powers of a body, and so be able to establish a *Science* of Physics. But it is in any case clear that the qualities of the food might be reasonably supposed to be able to serve the purpose, if these qualities were sensible, which is in fact served by the physically unreal sensible qualities. It follows that, without holding that a sensible quality resembles a physical quality, we can intelligibly say that it represents, stands for, or serves instead of, a physical quality. It is necessary that

[1] What follows has nothing to do with Locke's use of the word 'represent'. He uses the word 'representation' (*Essay*, II., xxx., 2) as a synonym for 'image'. But we are concerned here only with the meaning of our claim that Locke accepted the doctrine of Representative Perception. An attempt was made in the previous article (pp. 69-70) to show that the phrase "idea of a quality" could be interpreted to mean 'idea representing a quality'. Cook Wilson seems to have thought that 'represent' should mean 'resemble'. (*Statement and Inference*, vol. ii., p. 771.)

some such account be given of the meaning of ' represent ', as implied in such phrases as " idea of a quality ", because if ' represent ' were taken to mean ' resemble '—and it seems certain that the two words do not in general have the same meaning—the inevitable inquiry into the extent of the resemblance of sensible appearance to the physical reality which it represents would be anticipated. And, in fact, on Locke's view, resemblance by no means necessarily accompanies representation. For the statement that " the ideas of primary qualities of bodies are resemblances of them "[1] means that the " ideas " which represent the macroscopic primary qualities resemble those qualities, and this is clearly intended to be a synthetic judgment. And the claim, that " there is nothing like our ideas [of secondary qualities] existing in the bodies themselves ",[2] means that the " ideas " which represent the microscopic primary qualities do not resemble those qualities, so that here representation and resemblance are unquestionably distinct.

Theories which agree in these two tenets may differ in detail, so that it is appropriate to speak of Locke's view, according to our thesis, as a *version* of the doctrine of Representative Perception. Thus the Cartesian version differs from the Lockian version in its account of the nature of physical reality. But unless what is said to be represented by sensible appearance is at least spatial it is not properly described as physical reality. So a theory which maintains, with Berkeley, that only spiritual substances are represented by sensible appearance, or, with Hume, that the nature of what is represented cannot be determined, should not according to the above formulation be classified as a version of the doctrine of Representative Perception.[3] Then, again, different views may be taken of the nature of sensible appearance. It may be held to be either dependent on, or independent of, the sensing of it, and so on, provided that it is not identified with physical reality.[4] This is important for our purpose, because Locke does not seem to have made up his mind about the status of " ideas of sensation," and this article does not try to determine his view, or views, on that question. Lastly, the extent of the resemblance of sensible appearance to physical reality may be

[1] II., viii., 15. [2] II., viii., 15.

[3] There is, so far as I know, no reason why the doctrine of Berkeley should not be called a version of the doctrine of Representative Perception, provided that the positive tenet is formulated in such a way as to include non-physical realities among the realities which sensible appearance may be held to represent.

[4] *Cf.* Hamilton (pp. 804-819) for various possible forms of Representationism in reference to the ontological status of the representative entities.

variously estimated without violation of the *sine quibus non* of the doctrine of Representative Perception. For our purpose, it is Locke's acceptance of the negative tenet that has to be made out; for it is the negative tenet that distinguishes the doctrine of Representative Perception from the Mixed View.

A special problem, which is easily seen to confront the doctrine of Representative Perception thus formulated, is presented by the tendency of the positive tenet to conflict with the negative tenet. For the negative tenet requires that physical reality should be numerically distinct from sensible appearance, that no physical reality should be any sensible appearance: but the positive tenet requires that physical reality should be *known* though not *sensed*, and this claim can be justified only by showing that sensible appearance can be the source of the knowledge of physical reality. This obligation is twofold. Not only must it be shown that sensible appearance is evidence for the existence of a physical reality of such a kind as the version of the doctrine of Representative Perception describes. It must also be shown that sensible appearance is the source of acquaintance with the qualities which are asserted on that evidence to belong to physical reality. The latter requisite offers a difficulty apart from the question of the cogency of the evidence, a difficulty which lies in the reconciliation of the numerical distinctness of physical reality and sensible appearance with the necessity of describing physical reality in terms of sensible appearance. On the one hand, there is a temptation to express the fact of numerical distinctness by saying that, just because no physical reality is any sensible appearance, no attribute of physical reality can be also an attribute of sensible appearance. On the other hand, the possibility of describing physical reality in terms of sensible appearance would be commonly defended by saying, that physical reality and sensible appearance have certain attributes in common, and that to describe physical reality it is necessary only to enumerate those attributes of sensible appearance which are also attributes of physical reality. The conflict is evidently due to different uses of the term 'attribute', and the different uses affect equally such terms as 'quality', 'property', and 'character'. When it is said that no attribute of physical reality can be also an attribute of sensible appearance, 'attribute' is treated as a particular. When it is said that physical reality and sensible appearance have attributes in common, 'attribute' is treated as a universal. Accordingly the formula which an exponent of the doctrine of Representative Perception selects for expressing the relation of sensible appearance to physical reality will be condi-

tioned by his attitude towards the problem of the particularity or universality of attributes.

The settlement of this controversy about the propriety of the application to characteristics, whether attributes or relations, of the distinction between universal and particular is fortunately beyond the scope of this article.[1] But it is important for our purpose that the point at issue in this controversy should be recognised. The two views are defined by Prof. Stout in his lecture on 'The Nature of Universals and Propositions'.[2] The one view, which Prof. Stout attacks, he formulates as follows: "There is no plurality of particular qualities corresponding to the plurality of particular things. The common quality is regarded as indivisibly single. Two billiard balls are both round and smooth. So far as they are both round, the roundness of the one is the roundness of the other. . . . Abstract nouns, as standing for the quality in its singleness, without reference to any multiplicity of things qualified by it, are thus regarded as singular terms, like proper names".[3] "Qualities and relations, as such, are universals."[4] To this he opposes the view that "a character characterising a concrete thing or individual is as particular as the thing or individual which it characterises. Of two billiard balls, each has its own particular roundness separate and distinct from that of the other, just as the billiard balls themselves are distinct and separate".[5] "Abstract nouns are . . . not singular but general terms. Shape, for example, stands for 'all shapes as such'."[6] On this view "the phrase 'common character' is elliptical. It really signifies a certain general kind or class of characters. To say that particular things share in the common character is to say that each of them has a character which is a particular instance of this kind or class of characters." This claim has nothing to do with the claim that some qualities are determinables, and that one determinate form of a given determinable is different from another determinate form of the same determinable. The difference between particular instances of a class of characters is not a difference of kind, whether generic or specific. This may be seen by selecting a variant of a determinable of the lowest order, where differentiation into determinate

[1] Cook Wilson's distinction between 'attribute' and 'attribute-element' seems to afford an argument in support of the recognition of particular attributes. For if 'attribute' can be resolved into 'having an attribute-element', and if an 'attribute-element' is a particular, the 'having a particular attribute-element' must be itself particular (*Statement and Inference*, vol. i., p. 153 *et seq.*; p. 199 *et. seq.*).

[2] *Proceedings of the Brit. Acad.*, vol. x. [3] P. 4.

[4] P. 3. [5] P. 4. [6] P. 5.

forms is precluded, such as 'equilateral triangularity'. On Prof. Stout's view, the equilateral triangularity of one equilateral triangle is not identical with the equilateral triangularity of another equilateral triangle. But the equilateral triangularity of each is "a particular instance of the kind or class of" equilateral triangularities, which is co-extensive with the class of equilateral triangles. It seems to follow that the relation of similarity can connect particular instances of a class of characters and not only particular instances of a class of things. On the other hand, those who hold that "qualities and relations, as such, are universal" must maintain the impropriety of the statement, that a quality of one substance is like a quality of another substance, except where the statement means that the resembling attributes are different determinate forms of the same determinable. Thus it would be right to say that the shape of one surface is like the shape of another surface, if, while each surface is triangular, one is a right-angled isosceles triangle and the other is an equilateral triangle. For this would mean that the single quality 'equilateral triangularity,' and the single quality 'right angled isosceles triangularity', the one of which belongs to the one surface (as well as to others not mentioned) and the other of which belongs to the other surface (as well as to others not mentioned), have in common the single character of being determinate forms of the single determinable, 'triangularity' (which single character is also common to other determinate forms). But, when two equilateral triangles are being compared, the proper statement is that the equilateral triangularity of the one is the equilateral triangularity of the other, and this statement would not, on this view, as it would on Prof. Stout's view, be incompatible with the numerical distinctness of the two triangles.

If, bearing in mind these two views about the nature of a character, we return to the distinction between the doctrine of Representative Perception and the Mixed View, we find that this would have to be expressed in one way by those who hold that a character is necessarily universal and in another way by those who hold that a character of a particular thing is itself particular. Let it be supposed that in some perceptual situations the sensible appearance is geometrically similar to the physical reality. According to the doctrine of Representative Perception, the situation would have to be described by those who hold that a character of a particular thing is itself particular, by saying that the particular shape of the sensible appearance is not identical with, but resembles, the particular shape of the physical reality.

But, according to the Mixed View, the situation would be described, by saying that the particular shape of the sensible appearance is the particular shape of the physical reality. And the internal inconsistency of the Mixed View would be easily seen to arise from the fact that, while this implies that the sensible appearance is identical with the physical reality, the claim, that the particular colour of the sensible appearance is not a characteristic of the physical reality, which is not coloured at all, implies that the sensible appearance is not identical with the physical reality. Those who hold that a character is necessarily universal could not accept this account. But they could give an alternative account. They would have to describe the situation, according to the doctrine of Representative Perception, by saying that the sensible appearance and the physical reality are different instances of the same single determinate shape. According to the Mixed View, the sensible appearance and the physical reality would be the same instance of this single determinate shape, and the internal inconsistency of the Mixed View would arise from the fact that, while this implies that the physical reality is identical with the sensible appearance, the view that the sensible appearance is, while the physical reality is not, an instance of colour, implies that they are not identical. The important consideration for our purpose is that, whereas, on the view that a character is as such a universal, the statement, that the shape of the sensible appearance is the shape of the physical reality, would be in accordance with the doctrine of Representative Perception, on the view that a character of a particular thing is itself particular, this statement, unless recognised as an elliptical way of saying that the two particular shapes are two instances of a class of such shapes, would abandon the doctrine of Representative Perception, and would imply either the Mixed View or Naïf Realism.

Now there seems to be no doubt that Locke would have acquiesced in the view that " a character characterising a concrete thing is as particular as the thing or individual which it characterises ". For he held that " general and universal belong not to the real existence of things ; but are the inventions and creations of the understanding " and that when " we quit particulars, the generals that rest [1] are only creatures of our own making ; their general nature being nothing but the capacity they are put into, by the understanding, of signifying or representing many particulars ".[2] It is true that in these passages Locke is con-

[1] Gibson quotes " result " (pp. 322-323).

[2] *Essay*, III., iii., 11. *Cf.* Gibson (pp. 322-323), and *Remarks upon some of Mr. Norris's Books*, § 12.

cerned rather with things than with qualities. But his attitude towards qualities is governed by the same principle. For, by way of illustration of the origin of universals as a means of avoiding endless names, he says, "Thus the same colour being observed to-day in chalk or snow, which the mind yesterday received from milk, it considers that appearance alone, makes it a representative of all that kind; and having given it the name whiteness, it by that sound signifies the same quality wheresoever to be imagined or met with; and thus universals, whether ideas or terms, are made."[1] The determination with which he clung to this view is strikingly evidenced in his criticism of Stillingfleet's distinction between nature considered as particular and nature considered as universal, or nature considered "as it is in distinct individuals" and nature "considered abstractly, without respect to individual persons". Stillingfleet's distinction is clearly expressed, and he gives reasons for drawing it. On the one hand, "the nature of man, as in Peter, is distinct from the same nature, as it is in James and John; otherwise, they would be but one person, as well as have the same nature".[2] On the other hand "the nature itself remains one and the same; which appears from this evident reason, that otherwise every individual must make a different kind".[2] Now not only does Locke fail altogether, in his first letter, to grasp Stillingfleet's view, but in his second letter he details with approval the objection of a friend, that Stillingfleet's "sticking so close all along to that vulgar way of speaking of the same common nature, being in several individuals, has made him less easy to be understood. For to speak truly and precisely of this matter, as in reality it is, there is no such thing as one and the same common nature in several individuals; for all, that in truth is in them, is particular, and can be nothing but particular".[3] This being Locke's view, the appropriate statement for him to make in comparing two similar things is, not that they have a quality in common, but that a quality of the one resembles a quality of the other.

But, before examining Locke's attempt to meet the difficulty presented by the tendency of the positive tenet of the doctrine of Representative Perception to lead to a qualification of the negative tenet, it is necessary to notice a peculiarity of Locke's version of the doctrine. In the account given above of the relation between physical reality and sensible appearance, it has been throughout assumed that sensible appearance is made up

[1] II., xi., 9. That Locke's language betrays the awkward nature of his position is not a sufficient reason for doubting that this was his position.
[2] *Works* (1794), vol. iii., pp. 72-73. [3] P. 175.

of things with qualities, in accordance with the prevalent view that what is sensed is never a bare quality, such as colour, but always a complex sensum, to which qualities, such as shape and colour, belong. Now it seems pretty certain that Locke intended to denote, by "simple ideas of sensation", not what are denoted by 'sensa', but what are denoted by 'sensible qualities'. But what he intended to connote is far from clear. Despite his statement that the ideas produced "by the qualities that affect our senses" "enter by the senses simple and unmixed",[1] which suggests that we are supposed first to apprehend "simple ideas of sensation" and then by a subsequent synthesis to generate sensa, Campbell Fraser seems to be right in denying that Locke meant to assert that the simple ideas can be "received, or represented, in their simplicity",[2] and in claiming that the simple ideas are supposed to be original data only as constituents of aggregates—what Hume called "complex impressions"—in which they can be distinguished by subsequent analysis. Granted, however, that the simple ideas of sensation are always apprehended in groups, this does not require them to be qualities. Locke's usual expression is that they "exist in combination" or "accompany one another", and he never speaks of them as qualities of sensible appearance nor as qualities of anything except when he in his naïvely realistic language treats them as sensible qualities of bodies. He habitually regards them as dependent for their existence on the sensing of them, but he does not suppose that they are qualities of mind. Unfortunately, he never faces the problem of the ontological status of simple ideas of sensation.[3]

[1] *Essay*, II., ii., 1.

[2] Vol. i., p. 144. *Cf. Essay*, II., xii., 1; xxii. 2; Gibson, pp. 47-49, 61-62.

[3] *Cf.* T. E. Webb, *The Intellectualism of Locke*, for the view that "the Idea of Locke, like the Idea of Arnauld, is the mere act of thought considered as an object of reflection" (p. 38). It is true that in many passages, such as "our ideas being nothing but actual perceptions in the mind, which cease to be anything when there is no perception of them" (*Essay*, II. x., 2), and perhaps generally in the *Essay*, Locke holds the view that "ideas" depend for their existence on the consciousness of them. But in his *Examination of Malebranche* and his *Remarks upon some of Mr. Norris's Books*, he seems not to recognise the extent of the ground common to him and to his opponents; and his unwillingness to admit that on his own view "ideas," being neither "modifications of the mind" nor physical qualities, are in God in the only sense in which they are in the mind of a percipient—as objects of consciousness—leads him into difficulties. Sometimes what is seen is "the marygold in the garden" (*Remarks*, § 2); at other times it is "the image . . . on the retina" (*Exam.*, § 10). And he urges against Malebranche the difficulty of explaining how on Malebranche's view we can "know there is any such thing existing as body at all"

If, however, Locke was inclined to treat them as substantival, in the sense that they are not qualities of anything, this would only strengthen his inclination to regard them as particulars.

Viewed as an attempt, by one who regarded both "simple ideas of sensation" and qualities of bodies as particulars, to reconcile the two tenets of the doctrine of Representative Perception, Locke's distinction between Qualities and Ideas and his claim that some Ideas resemble Qualities present themselves as complementary requisites of that doctrine.

It is to preserve the negative tenet that the distinction between Qualities and Ideas is drawn. That Locke's language, even in the formulation of this distinction, is woefully confused, must be admitted.[1] Not only does he identify Qualities or "modifications of matter in the bodies" with "the power to produce any idea in our mind",[2] which strictly belongs to the body "by reason of its insensible primary qualities".[3] He also introduces the distinction between Qualities and Ideas as a distinction between two kinds of "ideas".[4] Moreover, his choice of terms is unhappy and is an offence against his maxim to apply "words as near as may be to such ideas as common use has annexed them to".[5]

(*Exam.*, § 52) without betraying the least suspicion that his own view is exposed to the same objection. In fact, he was justly "complained of for not having 'given an account of, or defined the nature of our ideas'" (*Remarks*, § 2), since, while willing to admit that "seeing a colour, and hearing a sound, is a modification of the mind", if this means "an alteration of the mind from not perceiving to perceiving that sound or colour" (*Exam.*, § 47), he never faces the necessity of determining the status, on his view, of the sound and the colour themselves. Webb's argument, that "in the Examination Locke denies that Ideas are 'Modifications of *Mind*', while in the Essay he consistently admits that they are 'Modifications of *Thinking*'" (p. 38), or that he denies "Ideas to be Modifications of the mental Substance," but holds they are "Modifications of the mental Energy, and, therefore, identical with the percipient act" (p. 37), does not seem to be capable of explaining these passages. And the passage which Webb cites, that in thinking "the mind observes a great variety of modifications, and from thence receives distinct ideas" (*Essay*, II., xix., 1), is of no assistance. For Locke is there speaking of mental acts, and the "ideas" referred to are "ideas of reflection", and there is no objection to the claim that these are "modifications of the mental Energy". What is in dispute is how the "ideas of sensation", of which some of these "modifications" are the acts of apprehension, are related to the apprehension of them.

[1] *Cf.* Reid, p. 317. Hamilton finds that these "strictures on Locke are rather hypercritical". But the nature of the confusion must be considered if Locke is to be interpreted at all.

[2] II., viii., 7, 8.

[3] II., viii., 23.

[4] II., viii., 7.

[5] III., xi., 11.

For his distinction requires that the term "Quality" be restricted, in its application, to qualities of physical reality, and that what it would be in accordance with general usage to call qualities of sensible appearance or, at any rate, sensible qualities be called not "Qualities" but "Ideas". He may have been influenced in this by his habit of not regarding "simple ideas of sensation" as qualities of anything. But it is not surprising that he is unequal to the strain of constantly observing the breach with the general usage of so widely current a term as 'quality', and that he queers his distinction both by speaking of "sensible qualities" when his distinction requires "Ideas" and by references to "ideas in the things themselves" where he should say "Qualities". If we distinguish the technical use of the terms by means of initial capitals, we may say that Locke's distinction safeguards the negative tenet of the doctrine of Representative Perception by calling qualities of physical reality 'Qualities' and by calling what we call qualities of sensible appearance or sensible qualities 'Ideas'.

It is in order to reconcile with the distinction between Qualities and Ideas the implication of the positive tenet, that physical reality can be described in terms of sensible appearance, that Locke goes on to claim, not that physical reality resembles sensible appearance in the possession of certain common qualities, but that certain qualities of sensible appearance or certain "simple ideas of sensation" resemble certain qualities of physical reality. Had he held that "qualities and relations, as such, are universals," and had he also recognised that "simple ideas of sensation" are qualities of sensible appearance, he could, without jeopardising the doctrine of Representative Perception, have claimed that physical reality and sensible appearance have certain qualities in common. But since he held that "general and universal belong not to the real existence of things," and since he did not usually regard "simple ideas of sensation" as qualities of anything, such a claim would have been fatal to the numerical distinctness of Qualities and Ideas. On the other hand, the formula which he chooses both makes it possible for him to describe physical reality in terms of sensible appearance and, so far from involving any qualification in the direction of Naïf Realism of the negative tenet of the doctrine of Representative Perception, itself presupposes the integrity of the negative tenet. For his claim is that some Ideas, namely, "ideas of primary qualities", "are resemblances of them, and their patterns do really exist in the bodies themselves", while other Ideas, namely, "ideas of secondary qualities", "have no resemblance of them

at all ".[1] This claim clearly requires that the particular Qualities and Ideas, which either resemble or do not resemble one another, be numerically distinct.

Now the whole purport of this proceeding is smothered when Locke is interpreted as if he accepted the Mixed View, and when the statement that " ideas of primary qualities " resemble Qualities is treated as if it identified " ideas of primary qualities " with Qualities. It has already been claimed " that it is difficult to understand how Locke could, on the supposition that he really intended the Mixed View, have come to write the passages which embody the doctrine of Representative Perception ". It may be worth while to examine Campbell Fraser's handling of the problem. Commenting on the statement " that the ideas of primary qualities of bodies are resemblances of them, and their patterns do really exist in the bodies themselves ; but the ideas produced in us by these secondary qualities have no resemblance of them at all ",[2] he says, " Locke, less subtle [than Berkeley], probably means, in his vague way, that the primary qualities are virtually the ideas we have of them, while of the other qualities there is nothing in the things that can be identified with what we feel. The alleged ' resemblance ' in the former case is Locke's way of asserting the objective existence of the presented appearance or idea." [3] Why Locke, if this had been his meaning, should have expressed himself so oddly—and the oddity is by no means adequately recognised in the description of Locke's language as a " vague way " of speaking—is not explained. In point of fact, Locke's statement, vague though it may be in other references, is with reference to this issue sufficiently definite, and the objection to it, from the point of view of a commentator who attributes to Locke the view that some " ideas of sensation " are identical with qualities of physical reality, is not that it is vague, but that it is definitely incapable of being so construed. But it has already been argued that the statement, which Locke *should*, according to Campbell Fraser, have made, is incompatible with the distinction between Qualities and Ideas which he had just previously drawn, while the statement which Locke *did* make is exactly what is required to prevent that distinction from reducing Locke to silence on the subject of the nature of physical reality and at the same time requires that the distinction be

[1] II., viii., 15. I take " them " to be, in the first statement, the Qualities represented by Ideas of Primary Qualities, and, in the second statement, the Qualities (microscopic) represented by Ideas of Secondary Qualities. See previous article (pp. 68-70).

[2] II., viii., 15. [3] I., 173.

maintained unimpaired. The interpretation, therefore, represents Locke as meaning something, which his statement cannot reasonably be supposed to mean, which he has no motive for saying, and which he has a sound motive for not saying.

With the truth or falsity of Locke's view this article is not directly concerned. But it is possible that the opinion of some of Locke's critics, that the claim that some Ideas resemble Qualities is not even plausible, has been in part responsible for the belief that Locke did not mean what he said. It must be admitted that Locke overstates the resemblance, since a determinate Quality is not, except perhaps in unusual perceptual situations, an exact " pattern " of the Idea which represents it. Possibly, however, Webb is right in saying that, " in stating our Ideas of the Primary Qualities to be exact resemblances, Locke merely meant to assert that those Qualities exist in nature exactly as in thought we conceive them to exist ".[1] But, in any case, the trouble is not removed by the substitution of identity for resemblance. The criticism offered by Berkeley seems, however, to have nothing to do with the variability of " ideas of primary qualities " where the Qualities are believed to be constant. He claims that " an idea can be like nothing but an idea ; a colour or figure can be like nothing but another colour or figure ".[2] Now Locke does not say that colour—an " idea of a secondary quality "—is like a Quality, but he does say that the " idea of shape " is like a Quality, and to this Berkeley's objection seems to be either that physical reality cannot have shape, or that a sensible quality cannot resemble a physical quality because the one is sensible and the other is physical—an objection which rests on a failure to recognise that resemblance, so far from precluding, presupposes difference.[3] And the criticism offered by

[1] *The Intellectualism of Locke*, p. 30. [2] *Principles*, viii.

[3] It almost looks as if Cook Wilson brings this objection against the doctrine, when he says, " Is H*s* (*i.e.*, heat as sensed), representative of H*x* (*i.e.*, Heat as in the body) as being like it ? No : for then H*x* as like a sensation in quality would itself have to be a sensation : and that, according to your own view, would be a ' flagrant absurdity ' " (*Statement and Inference*, vol. ii., p. 773).

Again, " With you ' representative ' means ' representing something other than itself ' ; it would be important to say what ' other than itself ' exactly means, whether ' other ' as one smarting pain is other than another such pain or different in kind as the smart is different from the thorn which causes it . . . your theory necessitates the latter kind of difference, for if H*s*, which represents H*x* in the body, were *like* H*x*, what you call the flagrant absurdity would be committed of supposing the body had a sensation " (pp. 779-780). But it is, perhaps, impossible to understand his argument without access to the paper which he is discussing.

Berkeley, in bringing this criticism, inconsistently implies that Locke

Reid seems also to have nothing to do with the fact that the resemblance is overstated, but to be conditioned by his curious [1] refusal to distinguish between 'act of sensing' and 'content sensed', which results in his first supposing that an "idea of a primary quality" is a "sensation" and then arguing that "no quality of an inanimate insentient being can have the least resemblance to it".[2]

Before considering the problem presented by the conflicting passages, we may observe that the view that Qualities and Ideas are numerically distinct, is by no means confined to the passages we have examined. It is clearly implied when Qualities are contrasted with "the ideas produced by them in the mind" [3] and when Ideas are contrasted with their "external causes", which may be "but a privation in the subject".[4] Even in a passage in which Locke, apparently overlooking the incompleteness of the resemblance of "ideas of primary qualities" to the Qualities which they represent, and so being in danger of substituting identity for resemblance, namely, in the statement that "a circle or square are the same, whether in idea or existence, in the mind or in the manna", the manna is still said to be "able to produce in us the idea of a round or square figure", while the "idea of motion represents it [the Quality] as it [the Quality] really is in manna moving".[5]

There are, however, numerous passages in which Locke uses the language of Naïf Realism. We have already seen that the distinction between Qualities and Ideas is introduced as a distinction among "ideas", and they are said to be distinguished "as they are ideas or perceptions in our minds; and as they are modifications of matter in the bodies that cause such perceptions in us". It is clear that the word "they" could grammatically refer to the same entities, but only at the cost of implying the identity of "ideas of secondary qualities" as well as of "ideas of primary qualities" with Qualities. But there are more definite instances. Thus "external material things" are identified

did hold the doctrine of Representative Perception. He seems not to have noticed that the argument, that what has been proved of "certain sensible qualities", namely, that they "have no existence in matter, or without the mind", "may be likewise proved of all other sensible qualities whatsoever" (*Principles*, xiv.), could not be a criticism of the same doctrine as the argument that "an idea can be like nothing but an idea".

[1] Curious in view of his full recognition of the distinction between "thought and the object of thought" (*e.g.*, p. 277).

[2] P. 229. Reid is referring to 'pain,' but he claims that "what we have said of pain may be applied to every other sensation".

[3] II., viii., 22. [4] II., viii., 1, 2. [5] II., viii., 18.

with "the objects of sensation" in a context which demands that "objects of sensation" be interpreted as 'objects sensed'.[1] Again "simple ideas", without distinction between "ideas of primary qualities" and "ideas of secondary qualities", are said to be "conveyed in by the senses, as they are found in exterior things",[2] and, in the sections which follow, the language proper to the doctrine of Representative Perception, according to which Locke speaks of "qualities which are capable of producing simple ideas in us",[3] alternates with the language proper to Naïf Realism, until Locke, in a desperate attempt to be fair to everybody, takes refuge in the comprehensive geniality of the formula "qualities or simple ideas",[4] as if the terms were interchangeable. In one passage he refers to "the particular ringing sound there is in gold";[5] and, when he claims that there can be no "doubt to the eye (that can distinctly see white and black), Whether this ink and this paper be all of a colour",[6] he implies that an "idea of a secondary quality" is identical with a Quality. But there are also passages in which Locke identifies only "ideas of primary qualities" with Qualities. Motion and figure are said to be "really in the manna whether we take notice of them or no".[7] Primary Qualities are said to be "in them [bodies], whether we perceive them or not".[8] And the important term "insensible primary qualities",[9] applied to microscopic qualities, implies that macroscopic qualities are sensible, though the expression "every particle of matter which has bulk enough to be perceived"[10] can be corrected by reference to the more accurate "masses of matter, of a bulk sufficient to cause a sensation in us".[11]

There seems to be no difficulty in accounting for these passages on the view that Locke really intended the doctrine of Representative Perception and that the passages are, accordingly, occasions of inconstancy. The inaccuracy arises in part from the well-known difficulty of constantly adapting a language to meet the needs of a doctrine which was formulated long after the language had become firmly established, a difficulty intensified for Locke by his contempt for the traditional terminology of the Scholastics and by his sympathy with the plain man. It is also in part due to the fact that Locke is largely occupied in giving an account of the origin of our "complex ideas of particular substances", and, as these ideas are certainly acquired before the difficulties of Naïf Realism are felt, the consciousness whose development

[1] II., i., 4. [2] II., xxiii., 1. [3] II., xxiii., 2. [4] II., xxiii., 6.
[5] III., xi., 21. [6] IV., ii., 5. [7] II., viii., 18. [8] II., xxiii., 9.
[9] II., viii., 23. [10] II., viii., 9. [11] II., iv., 1.

Locke traces does suppose qualities of bodies to be sensible. These considerations, together with the fact that Locke explicitly asks indulgence for such inconstancy,[1] and even chooses the term "secondary quality" as "accommodated to the vulgar notions, without which one cannot be well understood",[2] seem to justify the qualification of these passages in the light of what Locke says elsewhere. But the vital consideration, if we have to choose between the Mixed View and the doctrine of Representative Perception, is that the naïvely realistic passages have to be treated as occasions of inconstancy on either interpretation; and, in treating the passages in which "ideas of primary qualities" are identified with Qualities as also occasions of inconstancy, one can plead all the same influences in explanation, together with the additional factor of the resemblance of the entities thus inconstantly identified.

[1] II., viii. 8. [2] II. xxxi., 2. Cf. II., viii., 10.

II.—McTAGGART ON TIME.

By D. W. Gotshalk.

The topic of this article is McTaggart's argument against the reality of time. This important argument, first stated in this journal in 1908, and re-stated two years ago in *The Nature of Existence*,[1] remains, so far as I know, unrefuted. And it is considered by many to be irrefutable. The aim of this article is to examine McTaggart's argument and to sketch out, as I think I can, a refutation.

McTaggart divides his argument into two parts. In the first part he endeavours to show that the distinctions of past, present, and future, are essential to time. Time, if real at all, must form an A series: that is to say, it must form a series of positions distinguished by the characteristics of past, present, and future. This is McTaggart's first contention. Then, McTaggart endeavours to show that the distinctions of past, present, and future, involve one in hopeless difficulty and in contradiction. An A series, he contends, is impossible and meaningless, and can have no place in a true view of the existent. From this McTaggart concludes that time is unreal. Time cannot exist unless it forms an A series. But an A series cannot be admitted to exist. Therefore time must be unreal.

McTaggart's argument, in the main, proceeds, as is obvious, on the assumption that whatever is impossible or contradictory for thought must be non-existent and unreal in fact. This assumption has been challenged, but for the purposes of this article I shall assume that it is true. And indeed I think that in a certain sense it is true, and that McTaggart in his argument keeps within this sense. But an adequate treatment of this topic would itself require an entire article.

I shall now summarise the two parts of McTaggart's argument. At appropriate points I shall add my critical comments.

[1] Vol. ii., Bk. V., chap. xxxiii.

I.

Part one, aiming to show, as I have said, that the A series is essential to time, may be stated as follows:

(1) Positions in time may be distinguished in two ways. First, each position is either Past, Present, or Future. Second, each position is Earlier than some and Later than some of the other positions. The series of positions running from the far past through the present to the far future, or conversely, may be called an A series. The series of positions running from earlier to later, or conversely, may be called a B series.

(2) Time involves change. There would be no time if nothing changed.

(3) But suppose there were no A series, only a B series, what then could change? There are two possibilities. Either the events that occupy the series might change, or the facts[1] concerning the events of the series might change. But if time were only a B series, neither of these two possibilities could be realised. First, the events occupying the series could not change. They could neither cease to be events, nor lose their identity by changing into other events—which are the possible ways they might conceivably change.

For if N, an event, is ever a member of a B series, and is ever earlier than another member O and later than a third member M, N will always be and has always been earlier than O and later than M. That is to say, N has always been and will always be a member of the B series. But the members of the B series are distinctive events. Therefore N has always been and never will cease to be an event, and has always been and will never cease to be the event in the B series which it is. This eliminates the first possibility. And the second possibility, that the facts concerning the events of the series might change, is equally out of the question. Take an event, the death of Queen Anne, for example. Conceived as a member merely of a B series, none of the facts concerning this event can change. "That it is a death, that it is the death of Anne Stuart, that it has such causes, that it has such effects—every characteristic of this sort never changes."[2] And the temporal facts concerning the event as a member of the B series, namely, the possession by it of the char-

[1] A fact is defined by McTaggart as "the possession by anything of a quality, or the connection of anything with anything by a relation" (*The Nature of Existence*, vol. i., p. 11). A quality or a relation McTaggart calls a 'characteristic'.

[2] *Ibid.*, vol. ii., p. 13.

acteristics of 'being earlier than X,' and 'being later than Y' —these also do not change. Thus the death of Queen Anne is earlier than the death of Queen Victoria and later than the death of Queen Elizabeth. And in this respect it can never change.

(4) Change then is inexplicable, if time is a mere B series. There can be no change unless facts concerning an event change; events *qua* events can never change. But if time is merely a B series, no facts concerning an event can change. Change becomes impossible. On the other hand, if time is an A series, there can be change. Take the event, the death of Queen Anne. If this event is conceived as occupying an A series, then certain facts concerning it do change. "It was once an event in the far future. It became every moment an event in the nearer future. At last it was present. Then it became past, and will always remain past, though every moment it becomes further and further past." The event, in respect of its A-serial characteristics, thus exhibits constant change. "Such characteristics as these (moreover) are the only characteristics which can change. And therefore, if there is any change, it must be looked for in the A series, and in the A series alone."[1]

(5) Time is non-existent without change. Change is non-existent without time as an A series. Therefore time, if it exists at all, must form an A series. Or, an A series is essential to time.

Such is the first half of McTaggart's argument. I will offer two critical comments on it. They are (1) the view of change on which this first part of the argument is based, is incorrect, but (2) the conclusion, that the A series is essential to time, is nevertheless correct.

(1) The view of change on which the argument above outlined rests, is that there is and can be no change unless the facts of an event change. Events, which are for McTaggart a species of substances, do not change. Only facts—the possession by events of qualities and relations—can change. And if the facts of an event do not change, then there is no change. This position, I venture to think, is incorrect. There is change, I venture to think, even if no fact of an event can change. Take the event M, which is—my fountain-pen, full at t, slowly loses its ink and becomes empty at t'. According to McTaggart, the only facts of this event that can change are A-serial facts—the possession by M of futurity, presentness, and pastness. That M is an event, that as an event M is a passage of my pen from a state of being

[1] *The Nature of Existence*, vol. ii., p. 13.

full of ink at t to a state of being empty at t', that M did not annoy the owner of the pen, that M might have been expected, and so on, are facts of the event which, as facts, it is said and may be admitted, neither do or can alter or change. But further, it is conceivable—perhaps it is more than conceivable—that a method could be devised by the aid of which one could say definitively, for any time, whether M is past, present, or future, and how much so—*i.e.*, it is conceivable that the A-serial facts of M, as well as all these other facts, could be fixed for all time, so that they too do not and cannot alter or change.[1]

In that case, according to McTaggart's view, there would be no change at all. No facts would change, so no change. I venture to think, however, that there would be change. And the facts, I venture further to think, bear this out. For, while every fact of M, as thus fixed for all time, might be as a consequence incapable of change, two root facts of M would still remain: (*a*) that M is an event, and (*b*) that M as an event is a passage of my pen P from an earlier state N to a later state O. But change, *at least in one valid sense*, is a passage from a state to a state, and such a passage of my pen P from an earlier state N to a later state O, is therefore truly a change. So, even if all the facts of M were fixed and could not change, it would still remain that there would be change. The change would be the passage of P from N to O. Moreover, since this change would be a fact, and the facts here would all be fixed, there would not only still be a change, but this would always be so.[2]

[1] By fixing the dates when M is past ($_{n}T - T^{1}$), when M is present ($T^{1} - T^{2}$), when M is future ($T^{2} - T^{3}{}_{n}$), the A serial facts of M would be fixed for all time, and unalterably so.

[2] It may perhaps be said that the change here is after all a change of facts, though a change of facts of P, not of M. That change and change of facts of M are not equivalents, might be granted. That is, it might be granted that, even if all the facts of M were fixed, this would not eliminate, but indeed determine and perpetuate the fact that M as an event is a passage from N to O—*i.e.*, a change. But, it may be urged, facts of P, as time passes, change, and the event M is nothing but this change of certain of the facts of P. McTaggart's position in regard to change, if stated in the general form that only facts can change, it may be contended is therefore correct. This position, it is clear, cedes the point we urged above, namely, that there is change even if every fact of M is fixed and cannot change. Apart from this, however, I think it is incorrect. The chief facts of P here I submit are these: P is my pen at $t - t'$, P is in a state of being full at t, P is in a state of being empty at t', P has passed, between t and t', from a state of being full to a state of being empty, and so on. Further, I submit that these facts do not and cannot change. M, however, as a passage from N to O, is a change. So M, as real, cannot be a change of any of these facts of P, for they really do not change. Generally

(2) Nevertheless, McTaggart's conclusion here, in the first half of his argument, must be admitted to be the truth. The A series, with its distinctions of past, present, and future, is essential, as McTaggart contends, to our idea of change, and thus to our idea of time. If the A series were denied existence, change would have to be denied existence. And thus so would time. Take the event M, the above-mentioned change of my pen—if the distinctions of the A series could not be applied to it, if M could not, within the life of P, be distinguished by the characteristics of past, present, or future, then M as a change could not conceivably come off. The reason is this. The life of P is a passage including M as a stage which at one epoch lies ahead, at another epoch is reached, and at a third epoch is left behind. But if M were never future, it could never lie ahead, and if M were never present, it could never be reached, and if M were never past, it could never be left behind. Thus, if the distinction of past, present, and future, could not be possessed by M, M could not exist as part of the life of P. Indeed, the same would be true of any other part of the life of P, such as Y, so that, if M were not a member of an A series, not only could it not exist, but no other part of the life of P could exist. Or, the inclusive change which is the life of P could not itself come off.[1] We may therefore say that if the A series and its distinctions were denied existence, change must be denied existence. And since, if change is non-existent, there would be no time, we may consequently conclude that if there were no A series, there would be no time.[2]

we may say, facts of a thing (*e.g.*, of P), properly documented and dated, do not and cannot change, but change nevertheless is a fact. At least this is clear here. The above facts of P and their like do not and cannot change, but one of the facts of P is that it has passed, between t and t', from an earlier state to a later state. That is, one of the facts of P is change, since passage from such a state as N to such a state as O, is a change. For a fuller discussion of change than is possible here, the reader may consult an article by the author, entitled *The Nature of Change* and published in a forthcoming issue of *The Monist* (Chicago).

[1] Our point here, of course, is not that change equals mere change of A-serial characteristics (McTaggart's view), but that change involves at least, the possession by an event of the various A-serial characteristics. Whether the event possesses these characteristics permanently or not, is a different point. It is enough for our present point to urge that if an event could not possess these characteristics at all, the change which is the event could not conceivably come off.

[2] Dr. Broad has argued in *Scientific Thought*, chap. ii., that the future is just nothing. If this were true, our position here, I suppose, would need amendment. As amended it would state that, if the A series with its distinctions of past and present, were non-existent, change, and therefore

McTaggart's general conclusion in regard to time in this first half of his argument, is therefore correct. The A series is essential to time. On the other hand, McTaggart's view of change, I am forced to think, is clearly incorrect, and hence his reason for holding that the A series is essential to time, being based on his view of change, is also erroneous.

II.

I pass now to the second half of McTaggart's argument. The aim of this half is to demonstrate that time, viewed as an A series, is unreal. This half has two stages, which I shall treat separately. The aim of the two stages is to show, by two different considerations, that time must be held to be unreal. Time involves an A series—this has been shown. But an A series referred to reality involves an impossibility and an absurdity, and cannot be granted within reason to exist there. This is now to be proved.

To summarise the first stage of this argument, which stage aims to show that the A series involves an impossibility.

(1) Past, present, and future, are relations, relations which we ascribe to events. If anything is rightly called past, present, or future, it must be because it has a relation—a relation to something else.

(2) And this something else must be outside the time series or the A series. For the relations of the A series, as we have already seen, are changing relations. Thus, in the case of the death of Queen Anne, this event was once future, then present, then past. Its A-serial characteristics changed, it took on different relations. Relations exclusively between members of the time series, however, can never change. Two events, such as the death of Queen Anne and the death of Queen Victoria, are exactly in the same place in the time series one million years before they took place, while each is taking place, and years after each has taken place. Their relations to each other in the time series never change. Hence, if the relations of the A series change, and they do, it must be because the members of this series are in relation to something else besides other members of the time series. That is to say, it must be because the members of this series are in relation to something outside the temporal series itself.

time, would be non-existent. And our proof of this position would be similar to our proof of our previous position. McTaggart, however, has made an excellent and, as I think, a successful reply to Dr. Broad. See *Nature of Existence*, vol. ii., p. 23 ff. And see also R. M. Blake, *On Broad's Theory of Time*, MIND, N.S., 1925, vol. xxxiv., p. 418 ff.

(3) Let this something outside the time series be the entity X. Any series is then an A series when each of its terms has a relation to the entity X. This entity is itself not in time, yet it must be such that altering relations to it determine the other terms of these relations (the members of the A series are the other terms) as being past, present, or future. To find such an entity as X seems impossible, yet such an entity must exist, and must be found, if the A series is to be an established reality.

Such is the first stage of the argument here. The reality of the A series is shown to be contingent to the existence of a timeless entity X, and the discovery of such a timeless entity as X, it is suggested, is impossible. I shall make two critical comments on this stage of the argument. The centre of McTaggart's position here is obviously that the relations of the A series are changing relations. The timeless and impossible entity X is introduced because the members of the A series must be in relation to something outside it, and the members of the A series are said to be necessarily in relation to something outside the series because the relations of the A series are changing relations, whereas relations exclusively between members of the A series, never change. The proper question, accordingly, is this: Are the relations of the A series changing relations?

My first comment is that in a sense they are not. My second comment is that in the sense in which they are, their changing can be explained and satisfactorily understood without postulating the existence of a timeless entity such as X.

(1) In a sense the relations of the A series do not change. Thus, the death of Queen Victoria is *future* in respect to the death of Queen Anne, and the death of Queen Anne is *past* in respect to the death of Queen Victoria. And each is permanently so. The A-serial relations of these events here never do and never can change. Indeed, the A-serial relation of any one event, when the event is taken in relation to some other one event, *suitably chosen*, is fixed and permanent. The given event, in relation to the chosen event, is past, or present, or future, And it is permanently so. If this were the whole story concerning the relations of the A series, it would, according to McTaggart, be equivalent to giving up entirely the case for change, and thus for time. It is not the whole story concerning the A-serial relations, but, even if it were, it would not be equivalent, I venture to think, to giving up the case for change or for time. That in McTaggart's view it would be so equivalent, is obvious. According to that view, only facts change, and the only facts of an event that can change are the possession by it of the temporal

characteristics of past, present, and future. If an event does not change in respect of these, there is no other respect in which it can change. Where else can change come in? The answer to this question we have already stated in general form, and in the case of an event such as the death of Queen Anne, it is plain enough. Granting that the A-serial relations of this event in respect of any other one event taken separately, are fixed and never change, there is nevertheless change. The event *qua* event is a change. And any event with which it is related, such as the death of Queen Victoria, is a change. Each event here is *qua* event, at least a physico-chemical alteration in the organism of an English sovereign, and such an alteration in an organism is a passage from a state to a state, and so a change. And even if every characteristic of each event were fixed and could not change, this fact of change would remain a fact—a fact indeed as permanent as the existence of each event is.

(2) Still there is a sense in which the A-serial characteristics of an event may be said to change. Take an event, such as E, namely, the death of a mosquito biting my leg. This event is future for a certain specious present of my consciousness, it is present for a later specious present of my consciousness, and it is past (thank heaven!) for a third. That is to say, in relation successively to three different specious presents of my consciousness, the event is first future, then it is present, and then it is past. In this sense the A-serial characteristics of an event may be said to change, namely, when the event E is taken, not in relation *separately* to one other event suitably chosen, but in relation successively to three other suitably-chosen events—first, in relation to an event K, or an event preceding K, which is prior to E, then in relation to K^1, an event co-temporary with E, and finally in relation to K^2, or an event succeeding K^2, which is posterior to E. Under these conditions, and only under these conditions, can the A-serial characteristics of an event change. From this, however, it is clear that to understand the changing of the A-serial characteristics of an event, it is not necessary to postulate and discover an existing timeless X. This changing, such as it is, is explained, and exclusively explained, by the fact that the event in question is taken in relation to certain other events. The A-serial characteristics of E change because E is taken first in relation to K, then in relation to K^1, and then in relation to K^2. This was our point. The A-serial characteristics of an event can be understood as changing in the one sense in which they do change, wholly without introducing a timeless entity X. In order to understand whatever change in these

relations an event may be said to have, it is only necessary that the event in question be understood as taken in relation to certain other suitably successive events—more particularly in relation to the succeeding presents of a judging consciousness.[1]

Our conclusion then, at this stage, is that McTaggart's first argument against the reality of time does not hold. The reality of the A series is not contingent, as alleged, to the existence of a timeless, impossible X. This entity X was said to be necessitated because the relations of the A series were said to be changing relations. This latter position we have found to be in a sense false, and in the sense in which it is true, we have found that the changing of the temporal relations can be understood and wholly understood, without resort to a timeless X. X is not needed to make explicable how the relations of the A series can change as they change. This then disposes of the first objection to the reality of time. The reality of the A series and the operation of its distinctions of past, present, and future, are not contingent to the existence or the discovery of an impossible and timeless X.

III.

I pass now to the second and chief objection that McTaggart offers to the reality of the A series. This objection constitutes the other stage of McTaggart's argument against the reality of time. I will first state McTaggart's position.

(1) Past, present, and future, are incompatible determinations of events. Every event may be one *or* the other, but no event can be more than one. If I say an event is present, that implies that it is neither past nor future. If I say an event is past, that implies that it is neither present nor past. And so on. The characteristics past, present, and future, exclude each other.

[1] The paradox embedded in our two comments here, namely, that the temporal characteristics of an event are permanent, yet change, is parallel to the paradox to be mentioned below, that the temporal characteristics are compatible, yet incompatible. This latter paradox can be resolved as we shall see. The present paradox is resolved, as I think, by observing that the condition under which the A-serial characteristics of an event change—namely, relationship to three suitable succeeding events, K, K^1, K^2—is wholly different from the condition under which the A-serial characteristics of an event do not change—namely, relationship to one suitable separate event, to K *or* K^1 *or* K^2. These conditions being totally different it is natural that the A-serial characteristics of an event under the conditions will have properties wholly different—namely, will have, in the one case, the property of changing, and will have, in the other case, the property of not changing. But see also Section III. below.

This exclusiveness, moreover, is essential to change, and therefore to time. For the only change we can get is from future to present, and from present to past. The temporal characteristics, as determinations of events, must therefore surely be exclusive, that is to say, they must be incompatible.

(2) Yet every event has all of them. If M is past, it has been present and future. If it is present, it will be past, and has been future. If it is future, it will be past and present. All three characteristics, past, present, and future therefore, in the end, belong to each event. The temporal characteristics, as determinations of events, must consequently be non-exclusive, or compatible.

(3) Hence a contradiction. The temporal characteristics, past, present, and future, are incompatible. Only for this reason is change and therefore time possible. Yet these characteristics must be compatible. For all events have all of them. The A-serial temporal characteristics, hence, are contradictory. But the contradictory is the false. Therefore these temporal distinctions are false, and the A series, which enshrines them, if affirmed of the existent, is also false.

Such is the second objection that McTaggart offers against the reality of time. The reply which, according to McTaggart, will be made to escape the contradiction asserted in the objection, is this: "It is never true, the answer will run, that M *is* present, past, and future. It *is* present, *will be* past, and *has been* future. Or it *is* past, and *has been* future and present, or again *is* future, and *will be* present and past. The characteristics are only incompatible when they are simultaneous, and there is no contradiction to this in the fact that each term has all of them successively."[1]

Stated more at length, the principle of this rejoinder, is as follows: Past, present, and future, are both compatible and incompatible determinations of events. But this is not contradictory. A contradiction occurs when two opposite characteristics, such as 'compatible' and 'incompatible,' are said to be true of the same thing (past, present, and future as event-determinations) *under the same conditions*. But the condition under which past, present, and future, are incompatible determinations of events, is not the same as the condition under which they are compatible determinations. Past, present, and future are incompatible as simultaneous determinations of events. That is to say, they are incompatible under the condition of simultaneity.

[1] *Nature of Existence*, vol. ii., p. 21.

At a given moment an event is present, *or* it is past, *or* it is future. And it is only one of these then. On the other hand, the condition under which the temporal characteristics are compatible, is succession. An event, only successively, is future *and* present *and* past. At a given moment it is future, at some later succeeding moment it is present, at some still later succeeding moment it is past. It is under this condition of succession, but only then, that an event is future *and* present *and* past. But if this is true, the supposed contradiction vanishes. Past, present, and future, as event-determinations, are compatible and incompatible, but they are such under altogether different conditions. So there is no clash.

This position appears to be adequate to remove the difficulty with the A series which McTaggart presents here. It admits, as McTaggart claims, that the A-serial temporal characteristics are compatible and incompatible. But it states a condition under which these characteristics are compatible and a condition under which they are incompatible, and it shows that these conditions are different, and hence enables us to understand that the properties of the temporal characteristics will be different. They will vary with the circumstances. The alleged contradiction, thus, seems to have been escaped. And I think it has been escaped. McTaggart, however, is ready with a subtle objection to this alleged escape. This objection I will now state, and then I will add two critical comments upon it. These comments will endeavour to show that McTaggart's objection, thought through, does not hold.

As quoted above, the rejoinder to McTaggart's position had said: It is never true that M *is* present, past, and future. M *is* present, *will be* past, and *has been* future. Or it *is* past, and *has been* present and future. And so on. To this McTaggart replies: "But what is meant by 'has been' and 'will be'? And what is meant by 'is,' when, as here, it is used with a temporal meaning . . . ? When we say that X has been Y, we are asserting X to be Y at a moment of past time. When we say that X will be Y, we are asserting X to be Y at a moment of future time. When we say that X is Y (in the temporal sense of 'is'), we are asserting X to be Y at a moment of present time. Thus our first statement about M—that it is present, will be past, and has been future—means that M is present at a moment of present time, past at some moment of future time, and future at some moment of past time. But every moment, like every event, is both past, present, and future. And so a similar difficulty arises. If M is present, there is no moment of past time at which it is

past. But the moments of future time, in which it is past, are equally moments of past time, in which it cannot be past. Again, that M is future and will be present and past means that M is future at a moment of present time, and present and past at different moments of future time. In that case it cannot be present or past at any moments of past time. But all the moments of future time, in which M will be present or past, are equally moments of past time." [1]

Hence fresh contradictions, contradictions arising out of the nature of the temporal characteristics. When M is present, to take the first contradiction, there is no moment of past time at which it is past. Present and past are incompatible. Yet the moments of future time, in which M is past, are equally moments of past time. For future and past are compatible. Then, however, M is past, when it cannot be past. Thus a contradiction. More generally, the position is that " the moments at which M has any one of the three determinations of the A series are also moments at which it cannot have that determination ".[2] The future moments at which M has the determination of past are also moments of past time, at which, however, M cannot have the determination of past. This contradiction, it is explained, is due to the fact that the temporal characteristics are compatible and incompatible for each moment no less than for each event. Thus our old difficulty, that contradiction is involved in the very nature of the A-serial characteristics, shows its head in the very attempt to explain it away. And it would re-appear in any successive attempt to explain it away. Such is McTaggart's conclusion.

Two questions may be asked at this point. First, are the contradictions alleged to be in the rejoinder genuinely in it or not ? And second, if these contradictions are not in it, need the proof that they are *not* involve us in a fresh contradiction ? I think that the contradictions alleged to be in the rejoinder are not in it, and that the proof that they are *not*, need not and does not start a fresh contradiction. In the above-quoted passage, there are two of these alleged contradictions. These, of course, are typical. The first begins, " If M is present," the second begins, " Again, that M is future ". I will re-state each contradiction, and then endeavour to show, first, that neither contradiction is really in the rejoinder, and second, that no fresh contradiction is involved in the demonstration of this fact.

(1) " If M is present, there is no moment of past time at which it is past. But the moments of future time, in which it is past,

[1] *Nature of Existence*, vol. ii., p. 21.

[2] *Ibid.*, vol. ii., p. 21.

are equally moments of past time, in which it cannot be past." The contradiction here is that the moments (future moments) at which M has one of the temporal characteristics (pastness) are also moments of a time (past time) at which, however, M cannot have that determination (the determination of pastness). This contradiction, I venture to think, can be explained away by a proper answer to the question: When are the moments of future time, in which M is past, also moments of past time? Under at least one condition, it is clear, these future moments are not at all moments of past time, namely, when M is present. When M is present, these moments are moments of future time, and they are exclusively moments of future time. They are not at all past then. When M is present, however, it cannot be past. So the moments of future time in which M is past, are not equally moments of past time, where M cannot be past. And the same result is obtained if we answer the above question, not negatively, but positively, and state the condition under which the future moments under consideration, can truly be moments of past time. These moments can be moments of past time only when M is dead past. Then and only then can they be past. But here, where these future moments are equally moments of past time, they are the very moments in which M can have and does have the determination of pastness. So once more the above contradictory proposition is false. When the future moments at which M has the determination of pastness, are equally past, they are not moments of a time when M cannot be past, but are moments of the very same time at which M is dead past.

The first contradiction, therefore, is specious. It disappears as soon as we state the condition under which the future moments, in which M is past, can alone be moments of past time, and the condition under which they cannot. When M is past, is the first condition. When M is present, is the second.[1] When M is present, these future moments are future and cannot be past. Only when M is past, can they be past. As a result, these future moments are not moments of past time, where M cannot be past, but indeed are, as past, moments solely of that past time where M is and can be past. Hence, the contradictory proposition—that the future moments in which M is past, are equally moments of a time in which M cannot be past—is a false account of the

[1] It is of course true that 'when M is future' is a condition under which these future moments are not past. For they are future then. But to introduce this condition into the argument would neither strengthen nor weaken it, so I have kept it out.

temporal properties of these future moments and, under examination, disappears.

Some one, however, may object: Do you not commit yourself to a fresh contradiction in this explanation of the falsity of the present contradictory proposition? For how can M, as you say, be past and be present? Is M past when it is present, or past when it is not present? And if the latter, and if it is possible, as your two conditions assume, for M to be present and past, are you not tacitly admitting that in respect of M the temporal characteristics are incompatible and compatible? That is to say, are you not, in explaining away the present contradiction, tacitly embracing the original contradiction?

To this I should reply: I think not, for I do not think there is an original contradiction. That M is present *and* past, present *or* past, I admit. How M can be present *and* past, present *or* past, and so on, is stated in the original rejoinder. And this statement, so we claim, is free of contradiction. This latter is the present point at issue. Is the rejoinder infested, as McTaggart claims, with contradictions? I have tried to show that, in regard to the first of the two contradictions, it is not. In doing this, I have not assumed that the rejoinder is true and used it as a standard—that would be to argue in a circle. I have merely assumed that the rejoinder is meaningful, and I have tried to state, consistently with its meaning, the nature of the pastness of the future moments in which M is past. That is to say, I have tried to state under what conditions, consistently with the rejoinder, these future moments are past and not past. When this is stated, the first contradiction alleged to be in the rejoinder, is seen not at all to be there. For when we are aware that, consistently with the rejoinder, these future moments cannot be past when M is present (or when M is future) and can be past only when M is past, we are aware that it is an error to say that these future moments are equally moments of past time, where M cannot be past. When these moments are equally past, M is past. When M cannot be past, these moments are future. So, consistently with the rejoinder, the first of the alleged contradictions is a false account of the temporal properties of the future moments in which M is past. Therefore, the rejoinder cannot be said to be infested with it.

(2) The second of the contradictions occurs in the following passage: "Again, that M is future and will be present and past means that M is future at a moment of present time, and present and past at different moments of future time. In that case it cannot be present or past at any moments of past time. But

all the moments of future time, in which M will be present or past, are equally moments of past time." The contradiction here is that the moments (future moments) in which M will have one of the two temporal determinations (presentness or pastness), are equally moments of a time (past time) at which, however, M can have neither of the two determinations (pastness or presentness). This alleged contradiction, it is clear, has two parts: (*a*) the moments (future moments) in which M will be past, are equally moments of a time (past time), in which M cannot be past, and (*b*) the moments (future moments) in which M will be present, are equally moments of a time (past time), in which M cannot be present. Part (*a*) of this alleged contradiction, it will be noted, is identical with the first of the two contradictions. It has therefore been already treated and need not be treated here. As regards part (*b*), it can, as I think, be explained away by stating the condition under which alone the future moments in which M will be present, are equally and also past. It is clear, of course, that at any time at all they are not also past. For instance, they are not past when M is future or present. They are future or present then. And so far, namely where they are future or present, they are not equally moments of a time in which M cannot be present. They are indeed moments of a time in which M can be and is present, or can be and will be present. So far forth, hence, the above contradictory proposition does not hold. But if we answer our present question, not negatively, but positively, and state the condition under which these future moments are truly also past, the same result is obtained. These future moments in which M will be present, are also past under one condition, namely, if M is past. If M is past, these moments are also past, and only then. But if M is past, it was present. So once more the contradictory proposition about these future moments, is false. These future moments in which M will be present, are, as truly past, not moments of a time in which M cannot be present. They are indeed, as past, moments of a time at which M was, and can alone be, present.

The second contradiction alleged to infest the rejoinder, therefore, is also specious. It disappears as soon as we state the condition under which the future moments, in which M will be present, can alone be moments of past time and the condition under which they cannot be. When M is past, is the first condition. When M is present or future, is the second condition. When M is present or future, these moments are present or future. Only when M is past, can they be past. But when M is past, it was present. So these future moments are not moments

of past time, where M cannot be present, but indeed are, as past, moments solely of that time where M was and can alone be present. Hence the contradictory proposition—that the future moments in which M will be present, are equally moments of a time (past) in which M cannot be present—is a false account of the temporal properties of these future moments, and under critical examination, disappears.

Once more it may be asked: Do you not commit yourself to a fresh contradiction in this explanation of the falsity of the present contradictory proposition? For you say, in laying down the conditions governing the temporality of the future moments under consideration, 'when M is present or future,' and 'when M is past'. That is to say, you assume that M can be present *or* future, and that M can be present *and* be past, or, more generally, that the temporal characteristics are at once compatible and incompatible in respect of M. And this, is it not, is merely the original contradiction all over again?

Once more I should reply: In my opinion there is no original contradiction. The original rejoinder, as I think, states adequately the conditions (simultaneity, succession) under which M can be present *or* future, present *and* past, or, more generally, can have only one or all three of the determinations of the A series. It shows, and I think coherently, that there is no original contradiction. That it does this coherently, of course, is the present point at issue. Is the rejoinder infested, as McTaggart claims, with contradictions? In what I have just said, I have tried to show that the rejoinder is not infested with the second contradiction that McTaggart alleges, infests it. In doing this, I have not assumed that the rejoinder is true, and used it as a standard, but merely that the rejoinder has a meaning, and I have tried merely to state, consistently with this meaning, the nature of the pastness of the future moments in which M will be present. That is to say, I have tried to state under what conditions, consistent with the rejoinder, these future moments are truly past and truly not past. When these conditions are laid down, the second contradiction alleged to be in the rejoinder is seen not to be there. Consistently with the rejoinder, these future moments, as past, are moments of a time in which M was present and can be present. So consistently with the rejoinder, it is impossible to say that these future moments are equally moments of a time (past) where M cannot be present. That is, it is impossible correctly to say that the rejoinder is genuinely infested with this contradiction.

The rejoinder therefore is a defensible solution of the problem

arising out of the fact that the temporal characteristics are compatible and incompatible. It first defines a sense in which past, present, and future, are compatible determinations, and a sense in which they are incompatible. Because these senses are different, because the temporal characteristics are compatible under one condition and incompatible under an altogether different condition, it shows us that there is no original contradiction in the fact that the temporal characteristics are compatible and incompatible. Finally, it proves itself defensible against contradictions alleged to infest it. By an interpretation consistent with the rejoinder, these contradictions are shown to be specious and not to be in the rejoinder. The rejoinder therefore remains a coherent explanation of the A-serial characteristics as determinations of events.

IV.

This completes our examination of McTaggart's second and final argument for the unreality of time. The argument is invalid. It neither establishes that past, present, and future, as event-determinations, are contradictory, nor does it show that the explanation that they are not contradictory, is really infested with contradictions, or, finally, that the explanation of these contradictions is itself infested with contradiction.

Our general conclusion therefore is that the two objections offered by McTaggart against the reality of time, do not hold. Time, it is true, involves an A series. But the reality of the A series is not contingent to the discovery or existence of an impossible timeless X. Nor is the nature of the temporal characteristics of the A series torn with contradiction.

Many problems of course remain. Time, to be real, must not only be freed, as is I think the A series, both from impossibility and contradiction. It must also be squared with our idea of reality as a whole. Can time be a feature of reality as a whole? And if it cannot, is time therefore unreal? These questions, among others, must be satisfactorily answered before we may say unreservedly, if at all, that time is truly real. The present enquiry must pass them by. I have set myself herein merely the question: Is it true, as McTaggart claims, that time is unreal? These other questions, which remain unsolved, constiture a different enquiry. Their solution therefore will not be attempted here.

III.—THE CONTRADICTION OF "APPEARANCE AND REALITY."

By Michael B. Foster.

The fundamental contradiction which splits this work from top to bottom and to which the very title bears a silent witness, is this: Bradley starts from the thesis that nothing determined by a relation is real, and he is unable to escape from the conclusion that Reality itself is determined by a relation, by its relation namely to Appearance. It hardly matters from which page we select the text to illustrate this. We may choose a sentence from the concluding passage of the book: "The positive relation of every appearance as an adjective to Reality, and the presence of Reality among its appearances in different degrees and with diverse values—this double truth we have found to be the centre of philosophy."[1] We are concerned at present only with the first half of this assertion: "positive relation of every appearance . . . to Reality". Reality stands in a relation and is therefore, like everything relational, mere appearance. There seems no escaping from this conclusion, and we might pass on at once, if it were not important to show first that no mere slip of the pen or carelessness of expression is responsible for this contradiction, but that it is inherent in Bradley's premises and to be evaded by no possible ingenuity of expression.

The use of the term "Appearance," if this is taken in its strict and literal sense, of course implies a relation to that which appears. We need not lay much stress on this, because Bradley himself admits[2] that this term and its implications belong in strictness to the "perceptional side of things" and are applied only by a metaphor to the ultimate relation of the Absolute to the finite. But if "Appearance" is a metaphor, for what does it stand? And can it stand for anything which is not equally a relation? I think that Bradley to some extent concealed from

[1] 551 (references not further specified are to pages in *Appearance and Reality*, 2nd edition).

[2] 485.

himself the importance of these questions by his habit of translating this metaphor into terms of the substance-attribute relation.[1] All the other phrases which Bradley uses to describe the relation of the Absolute to its appearances (" absorption," " transmutation " and the rest ; even, as we have seen, " appearance " itself) are used to some extent as deliberate metaphors. But when he talks of appearances as " adjectival " or as " qualifying " the Absolute, he seems no longer conscious of metaphor. He seems, often at least, to regard *these* terms as the literal expression of an ultimate fact in which thought can rest. If that were so, it is clear that this formula is exposed to precisely the same refutation as the other metaphors. If the Absolute *is* a substance with qualities, it comes under the annihilating criticism of Bradley's own second chapter ; it is conditioned by its adjectives and therefore mere appearance. But we cannot bind Bradley to the literal implications of this formula. It may be significant that he should be driven so constantly to use language, which involves, if pressed, the overthrow of his own thesis, but there is of course no doubt that he would have declared, if challenged, that the terms Adjective and Quality are borrowed, no less than the others, from an alien sphere, that they only represent the truth by a metaphor, and that they no longer represent but distort it, if the metaphor is pressed so far as to involve a *relation* between the Absolute and its appearances. He insists categorically [2] that the Absolute and its appearances cannot stand in a relation to one another, and he claims that the truth of how they do stand to one another is in detail inaccessible to our intelligence. It follows that this truth is inexpressible in our language, and Bradley protests in one passage [3] against the demand that all metaphorical expressions should be reduced explicitly to terms which are literally applicable to the facts, on the ground that this demand would rob us of the use of language altogether. It follows that if we are to write at all, or speak at all, or think at all about the ultimate problem, how the Absolute stands to its appearances, we must do so with a tacit reservation, inasmuch

[1] *Cf.* all the passages where appearance is called adjectival ; *e.g.*, 459 : " appearances and one-sided adjectives of the universe " ; 469 " the whole diversity must be attributed as adjectives to a unity which is not known " ; 486 : " the finite is appearance because, on the one side, it is an adjective of Reality, and because, on the other side, it is an adjective which is not real ". It would be futile to multiply isolated instances of an assumption which is woven into the fabric of the book. The same view of their relation is implied whenever appearances are spoken of as " qualifying " the Absolute.

[2] 322, in a footnote. [3] 485.

as *any* form of language which we may select for our expression involves consequences which contradict the truth we desire to express. In short: any words which it is open to us to use of the Absolute must imply that the Absolute stands in a relation to its appearances; we know that this is impossible, and must therefore on every occasion discount the sense of our words as metaphorical to the extent of this implication.

It is Bradley's assumption that, so far as we succeed in doing this, we attain to some conception, however inadequate and vague and however inexpressible, of a supra-relational unity of Absolute and Appearances. I shall not comment on the vagueness and the necessary inexpressibility, because these are admitted by Bradley. The criticism of the effort here demanded of us is, not that it cannot be successful, but that, in so far as it succeeds, it defeats its own purpose. What is demanded is that we shall start with a given relation (that of appearance to what appears, of a whole to its parts, or of adjective to substantive), and think away every particular determination which makes it *this* relation and not another. But in so far as we have succeeded in this, it is false to conclude that we have attained to the conception of a supra-relational unity. We have, on the contrary, retraced the process of thought, we have arrived at the conception of a relation in general which is no relation in particular, we have arrived at that rudest and crudest of all relations—the mere given "together". It differs only in this from that "bare conjunction in space and time,"[1] which Bradley regards as the provocation and starting-point of all discursive thinking, that it lacks even the rudimentary determination of being in space and time. It is unthinkable because it is below relational thinking, not because it is above it. Thus Bradley has set out to think away a relation, but has succeeded only in thinking away all that makes a relation tolerable to thought. For an intelligible relation between Appearance and Reality he has substituted that brute conjunction which is the most elementary form of relation.

Bradley himself has shown[2] that the mind cannot rest in a bare conjunction, but is driven without repose to develop it into an intelligible relation, and that so long as thought, in an endeavour to hold fast to the given, resists the development of an intelligible relation, it is condemned to oscillate between assertion of sheer identity and assertion of abstract difference between the two related terms—assertions no less contradictory with themselves than with each other. It is instructive to substitute "Appearance" and "Reality" for Bradley's symbolical "A and

[1] 566.

[2] See especially A. and R., Appendix I.

B," and to see how precisely Bradley's dialectic can be applied to his own conclusions. His irrepressible tendency to use terms which imply more than he can allow himself to mean is nothing but the impulse of thought to develop a conjunction into an intelligible relation. A certain measure of such development is necessary if Bradley is to express himself in language at all. And yet if this development were carried through to the end, it would compel the acknowledgement of a relation between Reality and Appearance. Bradley must therefore ever and again cut it short and discount retrospectively the implications of what he could not avoid saying. But in doing so, he falls a victim precisely to that vicious oscillation characteristic of thought which refuses to embark on a relational development. He cannot specify the relation between Appearance and Reality, and is reduced therefore to an insistence on their absolute difference tempered by the emphatic assertion of their absolute identity; "they are different" and "they are the same"—the whole book is an oscillation between these contradictory alternatives.

This is the ground of the double standpoint discernible throughout the work. There are two states of the world, "before" and "after". As things are, they are simply divorced from reality, they are "mere appearance"; but after transmutation, or "in" the Absolute, they are (we are almost constrained to say "will be")[1] simply one with reality. The same oscillation shows itself in another way. So long as Bradley approaches his problem from the side of Appearance, he is content to display its contradiction and to assert its utter unreality: and this is as true of the subjects of his Second Part as of those of his First Part.[2] The same method is applied, *e.g.*, to "Goodness" in chap. xxv. as to "Causation" in chap. vi.: each is found to contradict itself, and the one can do no less and the other can do no more. But when Bradley approaches his problem from the other side and asks "What is Reality?" he replies "Reality is the Whole, or the System of its Appearances," and this implies that appearances are absolutely real, since a real whole must consist of real parts and a real system of real components.[3] And so

[1] Bradley is himself sometimes betrayed into the use of the future tense; *e.g.*, p. 282. It is superfluous to observe how closely Bradley's account keeps to the language of religious imagery.

[2] It must have struck every reader that to name the two *parts* of the work "Appearance" and "Reality" respectively was grossly misleading. If the title of the book is to indicate the contents of its two parts, it should be called "Appearance and Appearance".

[3] This was Ward's criticism (see MIND, Jan. 1925, p. 32) and seems indisputably sound.

he vacillates between the two indispensably complementary but irreconcilably contradictory assertions, that Appearance is not reality, and that Reality is nothing but appearance.

To repeat and to sum up: there is no escape for Bradley from this fundamental dilemma:—if he defines the relation between the Absolute and its appearances, he must admit that the Absolute is limited by that relation and is therefore appearance; if he leaves it undefined, still it is no less a relation, and *because* it is undefined, it keeps him swinging between the alternatives of bare denial and bare assertion of an abstract identity.

There are times when Bradley is conscious of this fatal oscillation between two equally untenable extremes, and he is at no time quite easy in his acquiescence. He endeavours to escape from it by means of his supplementary doctrine of Degrees of Truth and Reality. We saw in the quotation from his concluding passage, that he regards this doctrine as one-half of that "double truth which is the centre of philosophy". It is only this doctrine, he remarks, which can maintain itself against "two sides of a mistake," *i.e.*, against an empty transcendence on the one hand and a shallow Pantheism on the other; and he goes on in the same passage to make the remarkable claim that "our pages may be called one sustained polemic" against these two extremes of error.

We may admit that this doctrine of Degrees is an inspired anticipation of the truth, that it sprang from Bradley's instinctive dissatisfaction with the conclusions of his own premises and from his desire to supply a corrective to them. But we must insist that it is not a doctrine which Bradley could consistently hold, and that it provides him with no way of escape from the dilemma we noted above. If it represents a polemic, it is a polemic of Bradley against himself, for the restless oscillation between Pantheism and Transcendence (or their equivalents) is, as we have seen, inherent in his own position.

The doctrine is briefly this: though everything finite, in comparison with the Absolute, is "mere appearance," still finite things do differ from one another in the *degree* of their reality, or in the *amount* of transformation they will require in the Absolute, and the assessment of the provinces of the world of appearance according to the degrees of their reality Bradley regards as the task of a systematic metaphysic. He renounces for himself any attempt to achieve this task, or even to begin it, but he thinks that he has laid the foundations on which the future metaphysician can build; in particular he formulates the

criterion of reality (the twofold criterion of "Harmony" and "Comprehension"; see 363-364) by the application of which he expects that this task can be fulfilled. We will attempt briefly to show that this expectation is a delusion, and that, in the sense in which Bradley anticipated it, no further construction upon his foundations is possible.

We may pertinently ask why, if the task is possible, Bradley does not in any single instance demonstrate to us how his criterion can be applied to determine the degree of reality possessed by a phenomenon. And it is useless to plead that this is a task beyond the scope of the present work, to be undertaken, if at all, only in some future work of constructive metaphysics. *If it were possible, it must have been already done in this work.* Bradley has already surveyed the provinces of the phenomenal world, and included them in a common condemnation as appearance. The criterion by which they were condemned as appearance, *this* and no other must be the criterion of their reality. There can be no degrees of reality unless there were previously degrees of appearance. But in Bradley's condemnation there were no degrees. If the "twofold" criterion of reality, which Bradley presents to the future metaphysician, is the same as that which he himself employed[1] to reduce everything finite to a common level of unreality, it can produce no other result than has been already achieved; and if it is different, it is not a criterion of reality. And with this we may dismiss the doctrine of Degrees of Reality from a consideration of Bradley's philosophy.

To sum up once more before we proceed: Bradley is involved in this fundamental contradiction, that he has condemned all that is relationally conditioned as Appearance and yet cannot conceive Reality otherwise than as relationally conditioned. The doctrine of Degrees of Reality was an attempt to escape from this contradiction, but the attempt failed. No possible *supplementation* of Bradley can annul this contradiction; in the sense in which he himself anticipated it, no erection is possible upon his foundations. We can only remove the contradiction by exposing it. Of the *fact* of contradiction we have satisfied ourselves already, and there remains the far more difficult task of seeing the necessity of it, of tracing in detail the separate lines of Bradley's thought, as they converge inevitably towards this open clash. This article will of course make no claim to have accomplished this second task; it will attempt in what follows merely to contribute something to its accomplishment.

[1] Formulated, *e.g.*, on p. 76. "Anything the meaning of which is inconsistent and unintelligible is appearance and not reality."

Bradley's account of the phenomenal world displays a striking resemblance to that pre-kantian metaphysic which found its clearest expression in the English philosophy of the Eighteenth Century [1] and which is still the presupposition and unquestioned groundwork of Common Sense. This metaphysic was based upon the sciences of physical Nature on the one hand and an empirical Psychology on the other, since these were (apart from Mathematics) the only sciences which had attained to any noteworthy degree of development at the time of its origination. Hence it is the characteristic feature of this metaphysic that it regards the world (" this world," or, in Bradley's language, " the phenomenal world ") as exhausted by the objects of these sciences, as constituted by Nature on the one hand and by Finite Souls on the other.

This limitation of outlook was of course imposed by necessity upon Eighteenth-century philosophers; they *could* not profit by the results of sciences not yet in existence. The remarkable thing is that Bradley imposes upon himself the same limitation and ignores entirely that immense development of the sciences which has taken place since the Eighteenth Century. I do not mean, of course, the development which has taken place *within* the natural sciences and psychology, but that extension of the range of science, which has brought fresh realms within the scope of scientific treatment; I mean the development of History [2] and of the historical sciences,[3] of which Montesquieu and Adam Smith and F. A. Wolf were the pioneers, and of which the typical representative is perhaps the science of Philology. If we ask what is the object which these sciences study, we must answer that it is certainly neither Nature on the one hand nor the behaviour of individual souls on the other. It has been called " objective spirit "; but whether it is rightly or wrongly named, it can hardly be denied that it exists (and we may add in parenthesis, and with a side-glance at other philosophers than Bradley,

[1] These references to 'the Eighteenth Century' are intended here to be merely illustrative, and I have permitted myself a certain looseness, which I shall endeavour to rectify at the end of this essay.

[2] I confine this term to that autonomous science of history which has been developed since about the eighteenth century, and exclude that History which was cultivated by the ancients in the form of Art. There is no space here to justify this distinction; *cf.* Collingwood, *Speculum Mentis*, pp. 53, 201-217.

[3] The " Kultur-" or " Geisteswissenschaften ". The term 'comparative sciences,' which is sometimes applied to them, completely obscures their true nature, as though they differed from the natural sciences only in their inability to use the method of experiment.

that a philosophy which ignores the results of the sciences can scarcely lay claim to be " scientific ").

Bradley ignores these sciences completely and assumes the old dichotomy of the world into Nature and souls, or Things and Selves. We have only to scan the chapter-headings of Book I., to assure ourselves that he is occupied here exclusively with the categories of Psychology and of the sciences of strictly physical Nature. And again and again throughout this work the ' phenomenal world ' is subjected to the disjunction, assumed to be exhaustive, of ' physical ' and ' psychical '.[1]

The root of the contradiction, in which we have found Bradley to be involved, lies in his *unqualified* condemnation of the phenomenal world as a relational system—an injustice which no retrospective differentiation of degree could rectify; and for this *absolute* condemnation Bradley's limitation of outlook to the objects of Psychology and the physical sciences was directly responsible. It is possible, by a slight distortion of the facts,[2] to regard ' things ' in Nature and the discrete plurality of individual souls postulated by Psychology as terms in a purely relational system. But if Bradley had turned his thoughts to the sciences of spirit, if he had even given adequate consideration to the science of Biology, he would have discovered in the objects of these sciences that which is certainly ' phenomenal ' but which can certainly *not* be conceived in the category of terms in relation. And with this the whole edge of his criticism of the phenomenal world would have been turned.

Given this initial misconception of Bradley's, we can see that the doctrine of the Absolute is nothing but the complementary error. *Because* he erroneously took the discrete world of Nature and souls as the sole appearance, he was forced to postulate his scandalous Absolute as the sole reality. The same necessity of compensating by a transcendent Unity for the sheer discrete plurality of the world as they conceived it, had driven the Eighteenth Century to the conception of the God of ' Natural Religion '.[3]

This parallel with the Eighteenth Century is suggestive, but it is intended to be nothing more, and we must now turn our

[1] *Cf.* 490, 413.

[2] " Distortion," because it involves a mechanistic view of organic Nature. All Bradley's references to organic Nature assume this view. (See further p. 52 inf., note 3.) Here again the Eighteenth Century can plead necessary ignorance, where we must attribute to Bradley culpable blindness. It was precisely the sciences of *organic* Nature which were not yet developed in the Eighteenth Century.

[3] *Not* the God of Revelation.

attention to Bradley's own account of the two constituents of the phenomenal universe as he conceives it—Nature and finite souls.[1]

Nature is for Bradley the object of the experience of finite souls. Outside finite experience we have no reason to suppose that anything exists. If it did, it would certainly not be "Nature",[2] since it is the essence of Nature to depend entirely upon the relation to a finite experiencing subject. Nature is one half, or aspect, of the whole which is finite experience, and it is "the aspect most opposed to self-dependence and Unity".[3] All that is ideal or universal falls outside Nature, as object, and belongs to the perceiving mind, as subject. Nature thus, "has its essence external to itself" and "the universality (of physical elements) seems driven into banishment and forced to reside solely in laws".[4]

In the example of natural laws we see most clearly what Bradley means by saying that Nature has its own ideal essence external to itself. Without laws Nature would not be Nature, and yet the laws belong not to Nature, but to our thought about Nature; within that subject-object relation to which Nature is bound, although they are the laws of the object, yet they fall outside the object and in the subject. What is obviously true of laws of Nature is true no less of *all* system and organisation in Nature. Nature is not "given" as a temporal and spatial series, upon which our thought then imposes its network of laws; the spatial and temporal systems themselves are "constructions" of our

[1] I should perhaps justify my neglect of Bradley's doctrine of 'Finite Centres,' but do so with some reluctance, because I am not sure if I have understood it. In this work Bradley seems to make no very clear distinction between finite centres and finite souls, but there is no doubt that he made such a distinction in his later writing. As distinguished from a soul, a finite centre seems to be that immediate whole of experience, in which subject and object are not yet differentiated, which must be postulated below the level of discursive thinking to balance the immediacy of the Absolute Experience above this level, differing from the Absolute in being one of a plurality, and doomed to have its immediacy shattered by the explicit emergence of subject and object—the former of which, when its emergence is complete, becomes what we know as a soul, the latter what we know as Nature. If this exposition is correct, then we are justified in omitting finite centres from our account of the *phenomenal* world. They do not *appear* alongside souls and Nature; at the lowest stage at which any centre of experience is accessible to our investigation the disruption into subject and object has already taken place. (We may add that, as the plurality of Finite Centres cannot 'as such' fall in the Absolute, it is difficult to see where it does fall. It is an Appearance which never appears; *cf.* Ward, *loc. cit.*)

[2] 274. [3] 293. [4] 354.

minds. And we cannot even stop here. We cannot even regard Nature as a sheer plurality of diverse things, into which the perceiving mind imparts system and law, since even that would attribute to Nature a degree of self-dependence to which it can lay no claim. Not merely the law and system, but the very *identity* of physical elements falls outside their own being and into the subject which Nature implies.[1] Nature is that which is " given " to thought ; but when we ask *what* is given, there can be no answer, since *any* answer must attribute to Nature itself a *character*, or an element of universality, which it cannot possess in itself, but only in virtue of its relation to a subject. Nature is a " that " which has no " what," or rather whose " what " resides outside itself. Hence it can only be negatively defined. Bradley makes several attempts at definition,[2] but none of them go beyond that which we started by quoting : Nature is " the aspect most opposed to self-dependence and unity ".[3]

[1] *E.g.*, 354, 281. [2] See 268.

[3] Bradley's treatment of organic Nature is instructive. It might seem that Nature does attain in the organic sphere at least *some* degree of ' self-dependence and unity,' which does not pertain to it merely as *object* of sentient experience. But Bradley will hear nothing of such a claim. An organism does, it is true, possess for him a higher degree of unity than any inorganic object, but (this is the important point) it owes this unity entirely to its relation as object to a sentient experience, and differs from the inorganic only in the complication of its elements and the immediacy of its relation. Bradley indeed *defines* the organic, not by its possession of an intrinsic principle of unity (life), but by the immediacy of its relation to an experiencing centre. " By an organism we are to understand a more or less permanent arrangement of qualities and relations, such as at once falls outside of, and yet subserves, a distinct unity of feeling. We are to mean a phenomenal group with which a felt particularity is connected " (270 : similarly the inorganic denotes " qualities which fail to be connected with some finite *soul* "). We will not ask how the vegetable world can be called organic upon this definition. The important thing is that Bradley regards *relation to conscious experience* as the only possible principle of unity in Nature, whether organic or inorganic. Granted this, it is clear that the unity of the organic must be conceived as falling outside itself and in the experiencing subject, no less than that of the inorganic ; the difference between the two is not one of principle, but of degree of permanence and " immediacy " of relation. This is the essence of the mechanistic hypothesis, to which Bradley's whole treatment of Nature commits him. It finds explicit expression on p. 353 ; and the doubts expressed on pp. 354, 496 exert no influence upon his practice.

This reduction of the organic to a complicated ' case ' of the inorganic is illustrated in the treatment of the category of Activity (chap. vii.). This is the one category considered by Bradley which does not belong to the sphere of strictly physical science. Accordingly it is reduced to a ' case ' of causation, and when it cannot be denied that there is still *something* which distinguishes activity from causation, this residue of meaning

It might seem that to throw the universality of Nature outside itself into the experiencing soul is to sacrifice universality altogether. If it is assumed that there is a plurality of experiencing souls and it is yet denied that there is an identical Nature entering into and yet transcending each particular experience, what guarantee have we that the constructions of one soul are valid for another? In what sense can 'things in Nature' possess an identity at all?

The guarantee is given for Bradley by the principle of the Identity of Finite Souls. When "different people perceive the same thing," the unity of these diverse experiences does not *in any sense* depend upon a real identical object existing beyond them. To assume such an object is nonsense, since Nature is nothing beyond finite experience. The sameness is nevertheless a genuine sameness; it depends on the identity of the diverse souls which are the subjects of the different experiences. They perceive the same things, not because the things are the same, but because *they* are in essentials the same.[1] The same principle guarantees that the "constructions" and systems of one soul are valid for all souls; and "the higher we mount from the facts of sense, and the wider our principles become," the more completely can we be assured that individual divergence is excluded.[2]

It will be seen at once that the principle of the Identity of Finite Souls is the very keystone of Bradley's structure, as the sole guarantee of order, system and reason in the world, and we must therefore turn next to an examination of this principle.

We find, as we should have expected, that the identity of souls is for Bradley an ultimate and indemonstrable assumption. On the one hand "real identity of ideal content" is that "by which all souls live and move"; [3] on the other hand, "no direct guarantee of identity is possible," [4] and "there is indeed a theoretical possibility that other bodies are without any souls".[5]

The only proof which Bradley offers of his principle is the argument that, since difference implies identity, it is impossible to assert that souls are different without at the same time bearing testimony to their identity. This is of course no more than an *argumentum ad hominem*, valid against those who assert that other souls exist, but are different, but not against anyone who maintained that other bodies are without souls at all. But we

is thrown—into the perceiving mind! "The activity of anything seems to consist in the way in which *we* choose to look at that which is and becomes" (69).

[1] See 281. [2] See 345. [3] 347. [4] 346. [5] 344.

will not belabour further the obvious fact that this principle is unproved; it is more important to inquire precisely what it asserts. Here Bradley is very explicit; it asserts neither union nor concrete unity of souls, but mere abstract identity. "This identity need not imply a further relation between them. It need not, so far as we can see, act in any way," [1] and:

> "As to any working connexion our principle is silent. Whether an identical point in two things affects them otherwise, so as to cause other changes to happen, we are unable to learn from it. For how a thing works must depend on its special relations, while the principle as we have seen, remains perfectly general. Two souls, for example, which live together may by their identity be drawn into active community. If the same were sundered in time, this, for our knowledge, would be impossible. But in the latter case the identity exists actually as much as it exists in the former. The amount of sameness, and the kind of sameness, and what the sameness will bring forth—these points all fall outside our abstract principle." [2]

We wish to show briefly, first (this is the easier task) that this principle of the identity of finite souls as formulated by Bradley is inadequate to support the burden which must fall upon it as the keystone of his structure; secondly (this is by far the more important) that Bradley's formulation of it involves a contradiction.

Our first assertion seems even obvious. It is the essence of Bradley's principle to assert an identity and to leave it wholly unspecified. We are told that there is a "point" of identity in finite souls. But what this point *is*, and how it further affects or determines the constitution of the souls in which it appears—of this we are totally ignorant. But if so, then such an identity will *not* guarantee that the categories and "constructions" of one soul are valid for another. It emphatically will *not* justify Bradley's assumption [3] that, while we must admit a considerable divergence among individual souls in the perception, *e.g.*, of sensible qualities, "the higher we mount from facts of sense and the wider our principles become," the more assurance we have of identity. ("It is, for example, more likely that we share our general morality with another man, than that we both have the same tastes and odours in common.") Bradley is once more making the futile attempt to base a distinction of degree upon an abstract principle, which can, upon his own admission, give no ground for such a distinction. We *do not know* what the point of identity is; we cannot say that it has *any* influence upon the

[1] 353. [2] 352. [3] 345.

general constitution of a given mind; and we are clearly therefore *not* entitled to assert that souls are "more likely" to exhibit identity in the exercise of one function than of another, in a moral judgment than in a sense impression. The principle of the identity of souls is necessary to Bradley's system in order to guarantee the sameness of our moral judgments and in particular of those individual "constructions" which constitute Nature; but it is the essence of the principle which Bradley formulates that it is able to guarantee *nothing*.

So much for the inadequacy; the contradiction of Bradley's principle lies in this, that he is predicating of souls an abstract identity which upon his own premises can belong only to objects in Nature. He is predicating absolutely an identity which only has meaning when applied to an object essentially conditioned by relation to a subject. Nature, as we have seen, *is* for Bradley thus essentially conditioned; but finite souls *are* the subjects to which Nature appears, and *they* therefore, except at the cost of an infinite regress, cannot be regarded as essentially conditioned by relation to an experiencing subject. We will try to make clear how the self-contradiction of Bradley's principle springs from his failure to do justice to this essential difference between souls and objects in Nature, and between the kinds of identity proper to each.

Bradley says of identity and difference in Nature that they "may be said everywhere to exist but never anywhere to work";[1] and it will be seen from our previous quotations that it is precisely *this* identity, the identity that exists but does not work, which Bradley attributes to finite souls—with one important reservation which we shall consider later. But the identity of objects in Nature falls, as we have seen, outside their proper being into the mind for which they are objects. The perceiving mind, as we say, *realises* their identity, and goes on to specify that wherein the identity consists. Without this *realisation*—to support this we can appeal to Bradley's whole doctrine of Nature—the identity would not merely remain unspecified, but would be nothing real; just as, apart from relation to a subject, Nature itself is nothing real. But if that is so, if the realisation of abstract identity depends upon its relation to an experiencing mind, how can *this* identity belong to the perceiving minds themselves? Clearly only in so far as they are made objects for *another* perceiving mind, which can at once realise and specify their identity—and we slip at once into an infinite regress.

[1] 353.

What Bradley does in fact, is to attribute to finite souls this abstract identity, and at the same time to leave out that reference to a perceiving subject which the realisation of this identity demands.[1] It is true that this dependence upon a perceiving subject is an imperfection; it is an imperfection in natural objects that the realisation of their identity falls outside themselves. But the mere absence of the possibility of a similar external realisation of the identity of souls does not *ipso facto* confer upon *this* identity a superior perfection; instead it condemns it as unrealised and therefore as unreal. Thus the contradiction of Bradley's principle consists simply in this, that he has attributed to souls the abstract identity which belongs to objects in Nature, and must yet deny to souls that relation to a percipient by which alone this abstract identity can achieve realisation.

We have now only to take the final step. The identity of souls is for Bradley the final postulate of thought, and is yet in the phenomenal world sheerly incapable of realisation; *therefore* Reality is that in which this identity is wholly and completely actual, in which finite souls are entirely and absolutely one. In the ultimate analysis the Absolute is a necessity for Bradley's thought, as that in which the identity of finite souls is realised.[2]

We have shown that Bradley's doctrine of the Absolute is contradictory. We have tried in rough outline to demonstrate how this contradiction was necessary for Bradley. And we must

[1] Because it is only the reference to a perceiving subject which can specify the identity, by throwing it into relief against the difference, the point of identity of finite souls must remain unspecified and unspecifiable —a disability which, as we have seen, unfits this principle to serve as foundation for any further conclusion.

[2] It may be objected that we have laid too exclusive a stress on the need of *souls* to be perfected in the Absolute, and that according to Bradley not only souls, but everything finite, equally demands this completion. We will admit at once that Bradley often uses language as though souls were merely finite phenomena among other finite phenomena, but we must insist that the special position we have assigned to souls is demanded implicitly by his whole metaphysic. It is only the souls which necessitate the Absolute. For if we subtract the souls, what remains of the phenomenal world? This world is nothing but souls and their "constructions". It is true that Bradley in one passage admits the theoretical possibility that some elements are absorbed, as it were, directly into the Absolute without being "filtered" through any finite experience. But Bradley is willing to admit the 'theoretical possibility' of almost anything, and we can hardly attach a significance to this admission. We may add that in Christian theology only souls (not things) are resurrected in Heaven.

conclude with an endeavour at least to indicate how this contradiction may be overcome.

There are hints in Bradley's own book. We notice in the first place that the realisation which the identity of souls achieves in the Absolute is not by any means the realisation demanded by that "abstract identity" which was explicitly predicated of them. The realisation here achieved is *not* complete specification of points of identity held in relief against differences; it is concrete union, or unity. And the thought suggests itself: suppose the identity of souls demands a *different* realisation from that of objects in Nature (and we have seen that it is impossible for it to achieve the same realisation), suppose it is the essence of identity in souls not to be realised, as identity in Nature is realised, but to realise *itself*[1] in the achievement of concrete unity, suppose in other words that souls differ from natural objects in this, that the identity of the former must not only "exist" but "work," that it is only real in so far as it does work, and that its working consists in the achievement of a concrete unity—might it not then be possible to conceive this unity as to some extent realised in the phenomenal world? And however imperfect and partial this realisation might be found to be, still we should be saved from that blank denial of its possibility which necessitates the postulate of Bradley's Absolute.

We saw in the passage quoted above that Bradley himself regarded such "concrete" realisation of identity of souls even in the phenomenal world as possible, and indeed as normal. "Two souls . . . which live together, may by their identity be drawn into active community." But though he recognises the existence of this "active community" he completely mistakes its nature. He sees it, not as the concrete realisation of identity (the only realisation of which the identity of souls is capable), but as something extra and accidental, as something in the absence of which the identity of souls is still complete. *How* this active community is related to that abstract identity, is a problem which Bradley could never have answered. He speaks sometimes as if the "mere identity" were a minimum, of which active community is a higher degree.[2] But this is clearly nonsense, since the abstract identity of souls is wholly unspecified and therefore incapable of comparison as to degree. More usually he talks as though the

[1] If it is objected that we are using "realisation" in two different senses, we can only reply that there are in fact these two kinds of realisation and that the double sense of the English word simply bears witness to this fact.

[2] *Cf.* 345.

active community were a *result* of the abstract identity.[1] But an abstract identity is by definition an identity which exists but does not work, and is therefore incapable of producing results; and in any case we could never know *what* results it produced. I do not know if Bradley's language in other passages implies other answers to this problem. If so, they are certainly all as meaningless as those we have examined, for the true "relation" between active community and abstract identity of souls is simply this, that the former is the actual realisation of what the latter is a self-contradictory attempt to realise.[2]

But there is one passage in "Appearance and Reality" (353-357) in which Bradley himself makes the assertion that, whereas in Nature sameness and difference exist but do not work, when we consider the individual soul, we must "in the course of its internal history" admit that "the sameness of its states is an actual mover".

"All psychology in its practice is compelled to admit the working power of Identity. A psychologist may employ this force unwillingly, or may deny that he employs it; but without it he would be quite unable to make his way through the subject. . . . I will come at once to . . . what is familiar as Association by Contiguity. Here we are forced to assume that what happens now in the soul happens because of something else which took place there before. And it happens further because of a point of identity connecting the present with the past. That is to say the past conjunction in the soul has become a law of its being. It actually exists there again because it happened there once and because, in the present and in the past, an element of content is identical. And thus in the soul one can have habits, while habits that are but physical, exist, perhaps, only by a doubtful metaphor. Where present and past functions have not an inner basis of identity, the word 'habit,' if used, has no longer its meaning. Hence we may say that to a large extent the soul is itself its own laws, consists, itself, in the identity between its present and its past, and (unlike Nature) has its own ideal essence not quite external to itself. This seems at all events the view which, however erroneous, must be employed by every working psychologist."

It may seem that Bradley in this passage has turned the edge of our previous criticism by anticipating all that we have found

[1] *Cf.* the passage quoted above, p. 54.

[2] Again we may suggest that that limitation of Bradley's outlook which made him ignore the data supplied by the historical sciences was responsible for his blindness. If he had realised more clearly that the sciences of Law, Economics and Political History (*e.g.*) have made the forms of "active community" of souls the object of their study, he would not so readily have dismissed these forms as "accidental".

to say against him. Does he not here assert that identity in souls is a *working* identity, and place it by that criterion on a different plane from identity in Nature? But a closer scrutiny reveals that this passage, so far from refuting our criticism, supplies its strongest support. The identity to which Bradley here ascribes a working force is *not* the identity between souls, but the identity between states of the same soul, or the self-identity of the individual soul. Bradley has set his foot upon the path which, if he had followed it to the end, would have liberated him from his contradictions. But he did not take the further step, he did not see that the identity between individual souls also must be a working identity, or nothing. This was the path which was followed by the Kantian and post-Kantian philosophy. Kant's Categorical Imperative is nothing but the Identity of finite souls *in action*, and the efforts of Kant's successors were devoted simply to understanding the mode of action of that principle, of which Kant had done little more than grasp that it *is active*.

We have talked loosely of the philosophy of the Eighteenth Century as forming in many respects a parallel to Bradley, and it may be well finally, if only to avoid misunderstanding of what we have said, to attempt to indicate briefly Bradley's true place in the history of philosophy.

It is easiest to appreciate the cardinal position of Kant in the history of modern philosophy, when we recognise that the conception of God was central to all philosophies of importance before Kant and to no philosophy of importance after him. And I will venture to assert that the common tendency to explain the God of pre-Kantian philosophers as a device *ex machina* to extricate them from specific difficulties is fatal to an understanding of the development of modern thought. The one exception to the above generalisation is Hume. The importance of Hume consists in this, that he first deposed from its central position in philosophy the conception of the transcendent unity of finite minds in God and set up in its stead his doctrine of the Identity of Human Nature; *i.e.*, he substituted an abstract identity for a transcendent unity. This doctrine is for Hume a fundamental assumption,[1] as we have seen it was also for Bradley, and as it is still the fundamental assumption of Common Sense. We have seen that it is contradictory; but this should not delude

[1] See the books by Hendel (*Studies in the Philosophy of David Hume*, Princeton, 1925), and Rudolf Metz (*Hume*, Stuttgart, 1929), both, I believe, inspired ultimately by the articles of Prof. Kemp Smith in MIND, N.S. 14, 1905.

us into the old superstition which sees the relation of Kant to Hume merely as one of reaction. The step taken by Hume had carried him more than half-way to Kant's position; it was Hume who achieved the revolutionary stroke of directing men's thoughts from a unity above them to the identity within them. Kant's task was to think out the implications of the Identity of Human Nature postulated by Hume, and his advance lies in his recognition that it must be thought not as an abstract identity, on the analogy of objects in Nature, but as a working or concrete identity. The later German Idealism simply carried on this task from the point at which Kant left it.

Bradley is sometimes called a Hegelian, but it would be nearer the truth to call him a Humean. He stops short of following Kant, and thus he never overcomes the contradiction of Hume's principle which he uncritically adopts. Pressed nevertheless by the concealed contradiction, he turns back along the course of thought, and seeks to compensate for an abstract identity by the juxtaposition of a transcendent unity; as though to round off Hume's metaphysics by the addition of Berkeley's God. It is the contradiction of this juxtaposition which we have examined. Modern Philosophy must, it seems, tread afresh the path trodden once by Kant and his successors. Bradley, as we have seen, did not follow it, but his enduring service to English philosophy consists in his having brought it to a pass from which it is plain that this path is the *only* outlet.

Meanwhile Science has not waited for Philosophy. While the philosophers have been disputing whether to recognise it or not, History and historical sciences of 'objective spirit'[1] have calmly taken for granted that the identity of souls is a working identity and have set themselves without more ado to study its working. The assumption of the real, or working, identity of finite souls is as indispensable for these sciences as the assumption of the real self-identity of the individual soul is for Psychology. It is *not* merely in "the internal history" of a soul that "sameness is a mover"; sameness is a mover also in History proper, and History is nothing but this movement.

[1] See p. 49, *supra*.

IV.—COSMOLOGY IN PLATO'S THOUGHT (II.).

By J. E. Boodin.

Plato's Cosmology Complete.

The *Timæus* is Plato's great cosmological drama. It is evident now that Plato's cosmology has been a long time preparing. Plato recognized in the *Phædo* that the cosmological explanation is the only real explanation. He had then examined the efforts of others and tried his own hand at the task. He was not yet ready to propose a cosmology. But his mind is working at the problem, as is shown by hints in the *Phædrus*, the *Theætetus*, the *Republic* and the *Sophist*. And the problem was in his mind to the end of his labours, as shown in the *Philebus* and the *Laws*. But the *Timæus* is his supreme attempt to formulate a solution. The dialogue itself was long in the making, and spans a great part of Plato's creative career. In the introduction to the *Timæus* he places it the next day after the *Republic*. He gives a summary of the *Republic*, without, however, making any reference to the characteristic part of the sixth and seventh books. On the other hand, the conception of God in the *Timæus* is very much in the spirit of the second and tenth books of the *Republic*. Plato may have begun the *Timæus* before he finished the *Republic* as it now stands. But whatever may be the relation of part of the dialogue to the *Republic*, it is certain that the dialogue as it stands represents a considerable period of time. The *Timæus* is a dialogue with a major interpolation, and probably several minor interpolations. Owing to the interpolation, it falls into three main parts. After a considerable cosmology, Plato interrupts the discussion to begin again with a new and original analysis of the problem.[1] He later resumes[2] where he left off, giving a brief résumé of the argument. He reminds himself to be concise lest "we interpolate in our present long discourse a digression as long".[3] The conception of creation in the main

[1] Section 48 in Jowett's numbering. [2] Section 69.
[3] *Timæus*, 51.

dialogue is dualistic. It is a contrast between the world of being, which eternally is and which is apprehended by reason only, and the world of process which is grasped by opinion with the help of sensation and which is always in a state of "becoming and perishing and never really is".[1] The world is created and has a beginning, "being visible and tangible and having a body, and therefore sensible; and all sensible things which are apprehended by opinion and sense are in a process of creation and created". We have the evidence clearly before us in experience. Whatever comes into being runs through its cycle and passes away. "What is created," *i.e.*, has form, "must be created by a cause". While this seems a co-ercive inference for Plato, he recognizes that we cannot deduce the nature of this cause and its operation *a priori* by an examination of ideas. "But how can we find out the father and maker of all this universe? Or when we have found him how shall we be able to speak of him to all men?"[2] The only proof of the existence and nature of God must be functional. It must be a creative induction from experience in the light of our guiding ideal, the idea of the good. Plato does not confuse intuition with proof. Inductive proof must be a tentative process. It is a question of probability, not of absolute demonstration, though we must test our ideas to the best of our ability. The speaker is apologetic: "If then, Socrates, amid the many opinions about the gods and the generation of the universe, we are not able to give notions that are in every way exact and consistent with one another, do not wonder at that. If only we adduce probabilities as likely as any others, that ought to be enough for us, when we remember that I who am the speaker, and you who are the judges are only mortal men, and we ought to accept the tale which is probable and not enquire further."[3] The dialogue shows that Plato has made a thorough study of the naturalists in preparation for his own interpretation. One must admire the solicitude of Plato in the *Timæus* to do justice to the naturalistic explanation. Science may not be the whole truth nor the ultimate truth about nature, but philosophy cannot afford to ignore the data of science.[4] It should be noted that the circle in the *Timæus* are familiar with the teleological approach and sympathetic with the magnificent experiment of creating a teleological cosmology.

Plato starts with the world as he finds it in human experience.

[1] *Timæus*, 28. [2] *Ibid.* [3] *Ibid.*, 29.

[4] In the *Republic*, too, in the seventh book 533, Plato lays it down that dialectic can be revelatory "only to one who is a disciple of the previous sciences".

This world is a mixture of being and non-being. We can see meaning and value in it—in human life and in nature. But a great deal of it is weather. How shall we explain such a world? We must conceive the order and meaning in it as due to a creative artist. "Finding the whole visible sphere not at rest, but moving in an irregular and disorderly manner, out of disorder he brought order, considering that this was far better than the other." [1] The order of the world is due to divine genius. "The creator was good, and no goodness can have any jealousy of anything. And being free from jealousy, he desired that all things should be as like himself as possible." [2] God did not create the world according to the idea of the good, but like himself. God is the fairest and best. Being "the best of intelligible beings," [2] the creator framed the world "with a view to that which is apprehended by reason and mind and is unchangeable". [3] When Plato speaks of the creator looking "to that which is eternal," he does not mean that God looked to a model, for God created the model, and "this pattern contains in itself all intelligible beings, just as this world contains us and all other visible creatures". [4] He could not have looked to a created pattern for there was none. He is the original creator of patterns. Having created the model, God created the cosmos out of the four elements—earth, water, air and fire. He created it the fairest possible which means that it must be intelligent. And since "intelligence could not exist in anything which was devoid of soul," "he put intelligence in soul and soul in body". He made the world in the form of a globe, that being the fairest of figures. He made it self-sufficient and put the soul in the centre and suffused it through the whole, "and he made one solitary and only heaven, a circle moving in a circle, having such excellence as to be able to hold converse with itself, and needing no other friendship or acquaintance. Having these purposes in view, he created the world to be a blessed god". [5]

The structure of the world like its creator is eternal. But the world itself, being a world of process, could not be eternal. God therefore made "a moving image of eternity," by creating the rhythm and periodicities of the heavenly bodies according to number. "For there were no days and nights and months and years before the heaven was created, but when he created the heaven he created them also." [6] There is no inconsistency in Plato's speaking of a disorderly motion before time was created,

[1] *Timæus*, 30. [2] *Ibid.* [3] *Ibid.*, 37.
[4] *Ibid.*, 30. [5] *Ibid.*, 34. This suggests Empedocles' *Sphairos.*
[6] *Ibid.*, 37.

for time means rhythmic motion, and this was created with the heaven.

Having created the cosmos with the heavenly bodies and also having created the junior gods, he entrusted the details of creating man and other living creatures to these junior gods. God, as Prof. Howison put it, is a creator of creators. "The divine and immortal part of them, which is the guiding principle of those who are willing to follow justice and the gods—of that divine part I will myself give you the seed and the beginning."[1] The divine artist contributes the pattern, the soul and mind of the individual. In a less mythical way, Plato speaks of the details as being "the work of the second and co-operative causes which God uses as his ministers when executing the idea of the best as far as possible".[2] These secondary causes "are thought by most men not to be the second, but the prime causes of all things, which they cool and heat, and contract and dilate and the like". But we should "explore causes of intelligent nature first of all. . . . Both kinds of causes should be considered by us, but a separation should be made of those endowed with mind and which are the workers of things fair and good, and those which are deprived of intelligence and accomplish their several works by chance and without order".[3] Plato gives a place to the naturalistic type of explanation, but cautions against that as the only form. To understand things truly, we must understand them in terms of value, and this for Plato has cosmic significance. We may explain naturalistically the power of the eyes which they now possess, and the reflection and refraction of images, but we cannot thus explain their purpose: "God invented and gave us sight to this end—that we might behold the courses of intelligence in the heaven, and apply them to the courses of our own intelligence which are akin to them, the unperturbed to the perturbed; and that we, learning them and being partakers of the true computations of nature, might imitate the absolutely unerring courses of God and regulate our own vagaries. The same may be affirmed of speech and hearing; they have been given by the gods for the same ends and purposes."[4] The naturalistic point of view has a place, though it misses the main point—that of creative intelligence in the universe. For it is by its kinship of our mind to the creative mind in the universe that we can understand the ultimate significance of things, if at all.

As time went on, Plato felt that he had not done justice to the material conditions of creation—the world of necessity. In the

[1] *Timæus*, 41. [2] *Ibid.*, 46. [3] *Ibid.* [4] *Ibid.*, 47.

world in which we live, necessity has been persuaded " to bring the greater part of created things to perfection ".[1] But unless we understand the material with which the divine artist must work, we cannot understand why the world is what it is. In the new analysis which Plato interpolates, he leaves behind the science of Empedocles and the early naturalists. He has discovered the atomists who furnish a more adequate picture of the world of necessity, which Plato also calls the world of chance or accident because it is not guided by teleological causes. In the first discussion Plato dealt with two classes : " One which was assumed by us to be a pattern, intelligible and always the same ; and there was a second, which was only the imitation of the pattern, generated and visible ".[2] Now he feels that this analysis is inadequate. He must add a third factor. This he naturally finds it difficult to explain, because it has no intelligible nature. But we may attribute " a natural power " to it. We may call it " the receptacle, and in a manner the nurse of generation ". The reader will share Plato's difficulty. There are three factors in creation : structure, becoming, and space. When we think about the world we think in terms of structure. The structure of nature has been contributed by the divine mind and it is this structure which makes the world intelligible to mind. But if we abstract the changing world of becoming from structure we can, Plato thinks, still apprehend it by sense and opinion. The third factor, space, cannot be an object of thought ; for it has no structure, nor can it be sensed. We grasp it by " a spurious reason," [3] a sort of intuition. But still Plato is able to tell us what we mean by it. It " is eternal and admits not of destruction ". It is what we mean when we say " that all existence must of necessity occupy a space and that what is neither in heaven nor in earth has no existence ".[4] Surely such a space would be dry nurse of creation.

We get a clearer idea when Plato tells us that " being, space and becoming, in their three manners existed before the world ".[5] Being or structure, which God contributes, must be contrasted with becoming and space, *i.e.*, with space and its disorderly contents. The latter two constitute the nurse or matrix in which creation takes place. In this motley matrix everything is confused and interfused. The mixture shows traces of earth, water, air and fire. It is moistened, fiery, earthy and watery. These mixed contents are in a perpetual state of commotion on

[1] *Timæus*, 48. [2] *Ibid.* [3] *Ibid.*, 49.
[4] *Ibid.*, 52. [5] *Ibid.*

account of their lack of equilibrium, but through being shaken to and fro they are separated " like the grain shaken and winnowed by fans and other instruments used in the threshing of corn, when the close and heavy particles are borne away and settle in one direction, and the loose and light in another ".[1] As a result of this winnowing process, the unlike elements are separated off and the like elements are brought together. This sorting of the elements into different places takes place before the creation of the world. The whole illustration of the winnowing machine and its work is borrowed from Democritus. This would be as easily recognized by Plato's contemporaries as would be the borrowing from Empedocles and other scientists. It is absurd to suppose that the elements were constituted by triangulating space, because the elements were already in existence, and the mechanical sorting process had taken place, " before the universe that was arranged out of them came into being ". What God contributed was " form and number ". He gave teleological structure to matter. Plato adopted the conception of Leucippus and Democritus as the picture of the world of necessity—the world without God. By a stroke of genius Plato made use of the world of Democritus as a limiting concept, as Einstein used the space of Newton.

In the introduction to the interpolation, where Plato promises an account of " the nature of fire and water, and earth and air which were prior to the generation of the heavens and what happened before them," he tells us that the previous account in terms of the four elements must be regarded as a rough approximation. So far from these elements being " the letters or elements of the whole " (the analogy of letters is probably borrowed from Democritus), they cannot be regarded as even " the syllables or first compounds ".[2] He will not here essay the difficult task of speaking " of the first principle or principles of all things ". He will approach the problem inductively and observe the rule of probability to the best of his ability. He gives as a reason for distrusting the simplicity of the four elements that they are in a perpetual state of transformation, and never appear in the same form. But he corrects himself later. The transformation applies macroscopically, not microscopically, *i.e.*, it does not apply to the ultimate elements. These never change.

He starts with the assumption that " fire and earth and water and air are bodies " and that bodies are solids. This is in marked contrast with a statement in the earlier part of the dialogue, *viz.*,

[1] *Timæus*, 52. See Otto Apelt's translation. [2] *Ibid.*, 48.

that " nothing is visible when there is no fire, or tangible, which is not solid, and nothing is solid without earth ".[1] In this contrast he sets earth, the solid element, over against fire. The other elements are intermediate. The later conception of matter, as consisting ultimately of solids or plena, is of course derived from Leucippus, who adapted to his needs the being of Parmenides. The solids again " must be contained in planes, and the plane rectilinear figure is composed of triangles ; and all triangles are originally of two kinds, both of which are made up of one right and two acute angles ; and one of them has at either end of the base the half of a right angle which is divided by equal sides, while, in the other, unequal parts of a right angle are divided by unequal sides ".[2] Of the latter kind there are an indefinite number, but he chooses the one " having a longer side, the square of which is three times as great as the square of the lesser side ". Why Plato uses plane geometry to describe solids is difficult to see. Possibly this is in deference to Timæus, a fifth-century Pythagorean, who did not know solid geometry. In any case, Plato leaves no doubt that the ultimate elements are solids, and that he is substituting surface figures for purposes of description.

There are then two kinds of shapes of the ultimate elements, but there are " as many sizes as there are differences of species ". This is a refinement on the atomists who included size in shape and had an indefinite number of shapes—all invisible as with Plato. The four elements, Plato thinks, can be regarded as combinations of these two ultimate shapes, and Plato gives an account of how the gross elements are constituted from them. Earth is constituted by the solids having the equilateral surfaces, while the other three elements are made of the other kind of shape.

Plato's hypothesis of these shapes and the shapes of their combinations—the molecules of the elements—is dictated by two considerations, that of beauty and that of suitableness to account for the facts. An hypothesis, in other words, must be æsthetically congenial, but it must also work. And Plato feels that his hypothesis has these two merits, but it is tentative and he offers a reward for a better hypothesis. The fact which is critical for Plato is that of mobility. The earth atom must have a cubical form for it is the most immobile and the fire atom has a pyramidal shape because it is the most prickly and penetrating in character. It is also the lighter as it has the fewest bases, and the earth atom is the heaviest because it has the most bases, *i.e.*, has most matter. Thus weight as with Democritus depends on size.

[1] *Timæus*, 31. [2] *Ibid.*, 53.

Earth can be dissolved and recombined but cannot be transformed into any other element. The other three elements can be dissolved and transformed into one another. This process requires great force. "Among bodies which are similar and uniform, none can change or be changed by another of the same class and in the same state".[1] This idea was later adopted by Aristotle. Plato thus gives a naturalistic statement of the nature of matter and its distribution before creation, *i.e.*, abstracted from God. But "the ratios of their numbers, motions and other properties everywhere the God, as far as necessity consented and allowed, has exactly perfected, and harmonized them all in due proportion".[2]

With this reminder, Plato goes on to give a naturalistic account of motion. In the continuous mixing process various compounds assimilate or reject according to their nature. The sorting milieu thus distributes the elements into their natural places, as we have already seen. But why does not motion come to an end, when things are sorted into their natural places? Plato, with the naturalists from Anaximander down, believed in an eternal motion of matter. But he tries to explain this perpetual motion. Motion implies inequality or lack of equipoise; this is what gives rise to the relation of mover and moved in nature, and we cannot conceive one without the other. But why does not this lack of equipoise come to an end in a natural distribution of the elements? Plato was near to discovering the law of entropy. He saw that there must be what we call an unequal distribution of potentials for motion to exist. But he tried to find a way to show that motion would always go on. In the revolution of matter there is a compression of the parts and a tendency to close up the void within matter. "The tendency toward condensation thrusts the smaller particles into the interstices of the larger,"[3] according to their penetrating power. The particles of the different elements are thus borne up and down and every way, shooting through the interstices of one another. Thus the variation in shape and size causes a variation in place. "These causes generate an inequality which is always maintained, and is continually creating a perpetual motion of the elements in all time."[4] But one wonders why the condensation does not reach a limit, with all the interstices filled. It would seem as though a one-way process must reach an end.

The picture of interstices in things—varying with the size of the constituent particles—and of the interpenetration of matter

[1] *Timæus*, 57. [2] *Ibid.*, 56. [3] *Ibid.*, 58. [4] *Ibid.*, 58.

is unmistakably that of the atomists. The revolution itself takes place before creation and seems to be the whirl of Democritus. The conception of the void as conditioning motion is in striking contrast with that of the older dialogue where Plato, following Empedocles, assumes an absolute plenum and where motion is only possible by displacement, one thing pushing its neighbour out of place and that again pushing its neighbour out of place, " because there is no such thing as a vacuum ".[1]

There are, then, according to the *Timæus* two kinds of causes —mechanical causes and teleological causes. The latter are superinduced upon the former, and give meaning and value to the world. There are consequently two methods of research. There is the naturalistic method which starts with perception and proceeds by hypothesis and induction to explain the world as it appears. It deals with the world as it is before creation or as it would be without God. In other words, it takes no account of teleology. And there is the method of creative thought which tries to comprehend the universe in terms of structure, ideas, first principles. The latter method seeks the intelligible which is only fragmentarily revealed in the medium of the world of process, but which gives meaning and value to the world of process. It shows what the principles of nature are when there are no interfering causes. Thus the planets would naturally move in circles, but because of interfering causes their orbits have all sorts of irregularities. But when we grasp the limit—the perfect circle, the perfect beauty, the perfect goodness—we see the real meaning of the world and can the better understand the deviations. The intelligible in turn is the expression of intelligence, *i.e.*, of the genius of God. Our mind can comprehend nature because it is akin to the mind which gives order and meaning to things.

The creation for Plato has a beginning, though motion has no beginning. The idea of a beginning was suggested by Anaxagoras. According to the *Phædrus* the soul starts the motion in the beginning. He assumes creation in the beginning in the *Philebus* and in the *Laws*. It is therefore characteristic of the thought of Plato and not peculiar to the *Timæus*. Aristotle criticizes Plato for holding that the world has a beginning and advances the theory that the world, including the earth and man, is eternal. Xenocrates, the third head of the Academy, says that Plato's language is dramatic in the *Timæus*, and that he meant that the world is eternal. But what about his language elsewhere? The fact is that the Academy appropriated Aristotle's interpretation, and said that he had gotten it from Plato.

[1] *Timæus*, 79.

And John Burnet and A. E. Taylor think it is more complimentary to Plato to say that he meant that the world is eternal. But Plato's language is really in line with modern science. The second law of thermodynamics makes it necessary to postulate a finite beginning of our world. It is congenial to the scientific mind to think of the universe as eternal. But in that case there must be a compensatory process, and this science has not discovered as yet, though Millikan thinks that the cosmic rays may be evidence of the synthesis of matter from radiant energy. Certain it is that the earth and its inhabitants are not eternal (as Aristotle assumes). Every cycle has a beginning and end.

In the *Philebus*, Socrates explicitly identifies the good (not the idea), in a cosmic sense, with God. He has shown that neither pleasure without wisdom and mind, nor the opposite can be regarded as the good. He turns to his interlocutor and says: "And now I think I have sufficiently shown that Philebus' goddess is not to be regarded as identical with the good." Philebus answers: "Neither is your mind the good, Socrates, for that will be open to the same objections." Then Socrates makes the important statement: "Perhaps, Philebus, that may be true of my 'mind,' but not, I think, of the true, which is also the divine mind—that is another story."[1] This "story" probably refers to the *Timæus*. At the same time this statement in the *Philebus* helps us to interpret the *Timæus*.

In the *Philebus*. Socrates attempts the analysis of "the actual nature of the good" which he had excused himself from giving in the *Republic*. While his body has been mouldering in the grave, his spirit has been maturing. He not merely attempts an analysis of the factors which enter into the idea of the good, but he attempts a ranking of these factors. A logical analysis of the idea of the good must show what is implied in the structure of the good. But the language of structure—such as measure, unity, proportion, symmetry—is æsthetic language. He therefore finds that "the power of the good has retired into the region of the beautiful," for "measure and symmetry are everywhere reckoned as beauty and virtue". The true is also implied in the good, since the pursuit of the good is the pursuit of reality. He finally decides that he must hunt the good with three ideas—"Beauty, Symmetry, Truth". This does not seem clear, since he has already recognized that Symmetry is an æsthetic category. What is clear, however, is that Plato means to make the idea of the good the inclusive idea. The good must therefore include

[1] *Philebus*, 22.

values of truth and values of beauty, as well as values of virtue. Plato's intuition that beauty, truth and virtue are one in structure was on the right track. It is functionally that they are different. Socrates recognizes that structural analysis of the good is not sufficient. The good implies mind and wisdom. Else it is an abstraction. It also implies feeling. A good which is not felt is not a good. Knowledge and feeling, however, are our ways of participating in the ultimate good and do not constitute it. And of the two knowledge, having structure, seems more akin to the ultimate good than feeling. It is significant, however, that Socrates, even in the *Philebus*, recognizes that hedonic value cannot be ruled out from the idea of the good. In the *Laws*, Plato returns to the functional or utilitarian conception of the good. And we have seen that even in the *Republic* he regards this as " the best of sayings ". Plato's difficulty, I think, is in projecting his analysis of the good on one plane, either the structural plane or the functional plane. His great merit is that he emphasizes on the whole the functional plane and sees that even the ultimate good cannot be a mere impersonal abstraction but implies life and mind.

When Plato wrote the *Philebus*, his cosmology had become definite conviction. It is no longer the tentative hypothesis of the *Timæus*. In the *Philebus* as in the *Sophist*, Plato is conscious of the materialistic naturalists as the real opponents to his idealism. But we see a marked change in the attitude of the audience. In the *Sophist* the interlocutor, Plato's chorus, is young and uncertain but deferential. In the *Timæus* the chorus is sympathetic but experimental in its attitude. In the *Philebus* the chorus is dogmatic. Socrates says : " Let us begin by asking whether all this which they call the universe is left to the guidance of an irrational and random chance, or, on the contrary as our fathers have declared, ordered and governed by a marvellous intelligence and wisdom ". To which the chorus replies : " Wide asunder are the two assertions, illustrious Socrates, for that which you are now saying is blasphemy ; but the other assertion, that mind orders all things, is worthy of the aspect of the world, and of the sun, and of the moon, and of the whole circle of the heavens ; and never will I say or think otherwise." [1] The tone of the reply is nearer the *Laws* than it is to the modest tentative statement of the *Timæus*. It is probable that the *Timæus* is earlier and can be referred to by Socrates as a " story " that is familiar.

[1] *Philebus*, 28.

Plato's cosmological conception in the *Philebus* is nearer to the *Laws* than to the *Timæus*. Instead of starting with creation, the *Philebus*, like the *Laws*, starts with the conception of the cosmic organism. The elements in the cosmos are supposed to be like the elements in our bodies. But in the cosmos the elements are infinitely purer and exist on a vastly larger scale. Just as the elements are gathered up in our body, so the elements in the cosmos must be conceived as gathered up in a cosmic body by which our body is wholly nourished and from which it derives its qualities. And whence comes the soul of our body, "unless the body of the universe, which contains elements similar and fairer far, had also soul? Can there be any other source?" The chorus answers: "Clearly, Socrates, that is the only source"—showing that the conception is familiar. Socrates then draws the analogy between the microcosm and macrocosm with an assurance that is far from the *Timæus:* "Why, yes, Protarchus, for surely we cannot imagine that of the four elements, the finite, the infinite, the composition of the two, and the cause or fourth element, which enters into all things, giving to our bodies souls, and the art of self-management, and of healing disease, and operating in other ways to heal and organize,—that this last, I say, should be called by all the names of wisdom, and not imagine that while the other elements equally exist in a larger form, both in the entire heaven, and in the great provinces of the heaven, only fairer and purer, in this higher sphere the cause which is the noblest and fairest of all natures has still no existence?" "That would be utterly irrational," answers the chorus. "But if that is not true," continues Socrates, "should we not be wiser in assenting to that other argument, which says, as we have often repeated, that there is in the universe a mighty infinite and an adequate limit, as well as a cause of no mean power, which orders and arranges years and seasons and months, and may be justly called wisdom and mind?" The chorus answers: "Most justly". Socrates then repeats Plato's conviction, as old as the *Phædrus*, that "wisdom and mind cannot exist without soul". The cosmological attitude, here expressed, is represented as familiar to the Platonic circle. It shows the reverence for tradition by an old man. Plato feels added assurance from the fact that his theory "is in harmony with the testimony of those who said of old time that mind rules the universe".[1] Plato harks back to Anaxagoras. It should be noted that the conception of elements has become more complex in the *Philebus*, showing a

[1] *Philebus*, 30.

growing Pythagorean influence and pointing to a later period than the *Timæus*.

In the *Laws* the contrast with the attitude in the *Timæus* is still more striking. We may be sure that such a change was not produced over-night. The anxiety in the *Timæus* to do justice to the naturalists has given place to wholesale condemnation. Not only is it preposterous to attempt to explain the world by "nature and chance" and "certain affinities of hot with cold, or of dry with moist, or of soft with hard,"[1] but it is criminal. The materialistic naturalists are "lost and perverted natures" which must be "persuaded", if possible, of the evil of their ways. And if persuasion in prison fails, they must be put to death as enemies of the State. We must remember, however, that impiety is regarded by law and custom to be a capital crime. Plato no doubt felt he was humanizing the existent law, by allowing a period for conversion and recantation—a procedure followed by the Inquisition later on.

The teleological view of the universe is no longer regarded as a tentative hypothesis, but as demonstrable, though the conviction of the Platonic circle (including Aristotle) is so strong that they require no argument. Proofs of the existence of God are required only to bring to their senses benighted naturalists. The *consensus gentium* and the teleological argument both prove the existence of God, but the latter is stressed. As in the *Republic* and *Sophist*, Plato thinks of nature as divine art. Art is therefore prior to nature, as the naturalists use the term. It is prior to the elements —earth, water, air and fire. But Plato is no longer interested in Physics, and gives no hint why he regards the elements as works of art. To the man of eighty, the motto is: "Safety first". The safety of the state comes before research.

In the *Timæus*, Plato recognized, in common with the early naturalists, an eternal, non-teleological motion in nature which the creator reduces to form and number so far as he is able. In the *Laws* Plato goes back to the *Phædrus*, where soul is conceived as the only self-moving principle and the source of all motion. Secondary motions depend upon the primary motion. There must therefore, according to the *Laws*, be a soul circumfused through the cosmos and "there would be impiety in asserting that any but the most perfect soul or souls carries round the heavens".[2] There are three possible ways in which the soul can order all things: "Either the soul which moves the sun this way and that, resides within the circular and visible body, just as the

[1] *The Laws*, 889. [2] *Ibid.*, 898.

soul in us carries us about every way; or the soul provides herself with an external body of fire or air, as some affirm, and violently propels body by body; or thirdly, being incorporeal, she has some extraordinary and wonderful guiding power."[1] Whatever be the method, it is asserted as "the most perfect and absolute truth . . . that the soul is prior to the body and that the body is second and comes afterwards, and is born to obey the soul which is the ruler".[2] No attempt is made in the *Laws* to distinguish between God in the singular and the cosmic soul. In the *Timæus* the cosmic soul is itself created by God; in the *Laws*, as in the *Phædrus*, it is eternal. There are also souls which are causes of the motion and excellence of the stars and of the moon and months and seasons. These are divine and "all things are full of gods". In his constant use of gods in the plural, Plato shows conformity to popular orthodoxy.

Since the soul is conceived as the originator of all motion, it becomes necessary to assume an evil soul or souls to account for the origin of evil. In the *Timæus*, Plato assumes a disorderly motion as existing prior to creation. It is the characteristic motion in nature without God. Nature without God has no form or soul. It is neither good nor evil, though the inertia of the world of necessity sets certain limits to the ordering activity of God. For the most part it is induced to realize the divine pattern. There are no inherently evil souls in the *Timæus*. Disease and ignorance are the causes of men doing evil. All that human souls require in order to become good is right education. In the *Laws*, Plato has become more pessimistic. Evil is not just maladjustment but is inherent in reality. Since all motion is assumed to be due to souls, it follows that just as we must assume a good soul to account for the beauty and goodness which we find in the world, so we must assume an evil soul or souls to account for the disorder and evil in the world: "When the world moves wildly and irregularly, then an evil soul guides it."[3] Plato, however, retains his faith in astronomy. "The whole path of heaven and the movement of all that is therein is by nature akin to the movement and revolution and calculation of mind, and proceeds by kindred laws," and therefore it is plain "that the best soul takes care of the world and guides it along the good path."[4]

The *Laws* offer us no light as to how Plato conceives the evil soul or souls. But it is clear that the evil soul is not merely a human soul, though "upon this earth there dwell souls who have

[1] *The Laws*, 898. [2] *Ibid.*, 896. [3] *Ibid.*, 897. [4] *Ibid.*

an unjust spirit". The conflict of good and evil is a cosmic conflict. "As we acknowledge the heaven to be full of many goods and also of evils, and of more evils than goods, there is, as we affirm, an immortal conflict going on among us, which requires marvellous watchfulness; and in that conflict the gods and demigods are our allies, and we their property."[1] One wonders, if there are more evils than goods, why the teleological argument should seem so co-ercive. One wonders, too, why there should be this balance on the side of evil, if, as Plato maintains, "the good of the soul was by nature designed to profit men, and the evil to harm them,"[2] and if "injustice and insolence and folly are the destruction of us, and justice and temperance and wisdom are the salvation of us".[3] It would seem that the advantage of survival would be on the side of the good, as it undoubtedly is, though there are many degrees of good.

The creator in the *Timæus* does a wholesale business, in the *Laws* he does a retail business, if I may use a contrast by William James. In the *Timæus* God leaves the details to secondary causes. God creates the astronomical order, but after furnishing the junior gods with the immortal part, he entrusts to them the details of creating man and other living things. Hence God is not to be blamed for defects in the details. At worst you can blame the junior gods or the world of secondary causes. In the *Laws*, God, like a good craftsman, takes care of small matters as well as great matters.[4] No detail escapes him. He does not take "a holiday". In ordering things, God has regard to the whole. "The ruler of the universe has ordered all things with a view to the preservation and perfection of the whole, and each part has an appointed state of action and passion," and "you are created for the whole and not the whole for the sake of you".[5]

But the creator is not independent of his material. He must deal with souls which have an initiative of their own. All the creator could do was to contrive "a general plan by which a thing of a certain nature found a certain seat and room. But the formation of qualities he left to the wills of individuals. For every one of us is made pretty much what he is by the bent of his desires and the nature of his soul".[6] Really therefore the individual determines his own place, for better or worse. "All that remains to the master of the game is that he should transpose the pieces; sending the better nature to the better place, and the worse into the worse, and so assigning them to their proper

[1] *The Laws*, 906. [2] *Ibid.*, 904. [3] *Ibid.*, 906.
[4] *Ibid.*, 901. [5] *Ibid.*, 903. [6] *Ibid.*, 904.

portion."[1] We must remember that Plato's world is a world of value, and in the eternal scheme of values the pieces must be rearranged so as to make the best possible whole. God makes the best possible world, though it is far from a perfect world.

The law of compensation operates throughout. "When the soul changes greatly, either for the better or worse, by her own impulse or the strong influence of others, when she has communion with divine virtue and becomes divine, she is carried into another and better place, which is also divine and perfect in holiness; and when she has communion with evil, then she also changes the place of her life."[2] No one escapes the causality of his conduct.[3] "If thou sayest: I am small and will creep into the depths of the earth, or I am high and will fly up to heaven, you are not so small or so high but that you shall pay the fitting penalty, either in the world below or in some more savage place still to which thou shalt be conveyed." Thus, "the gods make all things work together and contribute to the great whole".

In the *Republic* the emphasis is on the ultimate significance of the individual. The rest—the state, the cosmic scheme—is machinery to educate the individual in virtue. In the *Laws*, God thinks more of the perfection of the cosmic scheme than of the parts, just as the physician's first care is with the health of the whole organism. But still the parts largely determine their own place by their own initiative. The gods can only reinforce the good resolutions of individuals. The evil soul is eternally busy to disturb the harmony of things. The conflict between good and evil is immortal, and the pieces must ever be rearranged in order that there may be some sort of harmony in the whole. Plato has no apocalyptic vision of a grand finale. The forces which operate for good or evil operate eternally. But in the meantime a man may save his soul by striving for the good and becoming more like God; and in this striving the gods assist him. Plato's God, unlike Aristotle's, is not merely pre-occupied with his own perfection. He works creatively to induce and encourage perfection. Nor is God, as with Fichte and Emerson, merely an impersonal constitution which registers the action of the parts. He takes part in the struggle.

I have tried to show that the cosmological point of view is a logical working out of Plato's philosophy. The conception of structure cannot be separated from soul and mind in a teleological conception of reality. God is required as the personal embodiment of the good and as the creative genius of the cosmos.

[1] *The Laws*, 903. [2] *Ibid.*, 904. [3] *Ibid.*, 905.

In recognizing that the world as it is is a mixture of being and non-being, Plato shows a sound respect for fact. The world of our experience is not a perfect world. There is some good in it. But there is a great deal that is evil or indifferent. Cosmology must explain the world as it is. Plato does not, like Hegel, juxtapose reality as a world of meaning and reality in its otherness—a merely contingent world. Such bifurcation is artificial and unreal. Plato's cosmology is an honest attempt to give a cosmic explanation of human experience. His dualism or pluralism is thoroughgoing. His cosmology reaches its height in the *Timæus* where he shows that the real root of failure lies in an inherent indifference or laziness on the part of the world in which God works to create order and beauty. Without the creative influence of God, this indifference would produce the situation pictured by the materialistic naturalists. In such a world individual parts persist in motion in a straight line except as otherwise determined by the fortuitous motion of other parts. Determination is merely mechanical, as we should say. But this is not that sort of world. There is pattern-creative activity in this world. We know pattern-activity in art and in morality. In the larger world, too, structure must be to a certain extent realized, for our mind can discover structure. We discover evidence of types and laws in nature. Else we could not have logic or science. On the other hand, this pattern-creative activity is not wholly successful. The natural laziness of the material must be overcome. Thus we find degrees of approximation only. The limit—perfect realization—is never reached in the world of process. But without the reality of the limit, there could be no approximation. We understand the degrees by creative apprehension of the limit. Furthermore, we must understand the limit as active; and this we can do only when we understand it as creative personality—mind in soul, *i.e.*, God. In the *Laws*, where Plato personifies evil, instead of conceiving it as "cosmic laziness," he takes a backward step. This, we have seen, Plato was led to do by abandoning the Ionian assumption of the universality of some sort of motion and instead attributing all motion to soul. This makes it necessary to assume evil soul to account for evil activity.

Plato was on the right track when he identified evil with "cosmic laziness" (to use Bertrand Russell's phrase). There is always the problem in cosmic evolution of inducing individuals to adjust themselves to a higher pattern—of bringing the electron into the atomic field, the atom into the molecular field, molecules into the structural field of molar body, inorganic matter into the field of living matter, living matter into a more and more complex

hierarchy of fields, man into the field of more adequate social patterns, and social patterns into line with the ultimate cosmic pattern. Always there is the laziness of the individual to overcome at any stage. And always there is the danger of reversion. Pluralism and inertia are the basis of maladjustment, but we must not forget that they are the basis of progress. This pluralistic and lazy world is the world in which God creates, "as far as necessity [*i.e.*, inertia] permits".

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V.—DISCUSSION.

THE MODERN THEORY OF RELATIVITY.

THE modern theory of relativity consists of the application to the representation of physical phenomena of a generalisation of the Lorentz transformation. It proposes to represent physical phenomena in terms of a space-time fourfold where the time co-ordinate is not independent of the other co-ordinates, and where the correspondence between two such fourfolds is expressed by a transformation where the space co-ordinates of the one involve the time co-ordinate of the other and the time co-ordinate of the first involves the space co-ordinates of the second. It asserts that the changes which constitute physical phenomena cannot be represented in terms of the concepts of space and time, where the co-ordinates which specify space are independent of the co-ordinate which specifies time, and the correspondence between two such systems is expressed by a transformation, where the space co-ordinates of the one depend on the space co-ordinates of the other, and where the time co-ordinate is the same for both. This latter scheme, now generally referred to as the classical scheme, appears natural and satisfactory to the normal mind, while the other appears vague and unsatisfactory. The statements regarding it, whether explanatory or illustrative, lack precision and in many cases are based on analogies whose applicability is doubtful. Further, mathematical processes which have been evolved on the older scheme have been transferred to the relativity scheme without examining whether these processes are consistent with the new scheme or require to be modified. It is therefore of interest to trace briefly the history of the development of the theory, to test the consistency of the different steps, and lastly to examine whether the hypothesis is necessary.

The important factor in the development is the Lorentz transformation, which occurs in connection with the Michelson-Morley experiment; and, as this is an optical phenomenon, it will be sufficient to consider the development of optical theory. From early times two hypotheses have been advanced to explain the propagation of light; these are generally known as the emission theory of light, and the undulatory theory. At the beginning of last century the theory which was generally accepted was the emission theory, but early in the century one of the outstanding difficulties of the undulatory theory, *viz.*, to account for the fact that the path of a ray of light

was a straight line, was resolved independently by Young and Fresnel. Fresnel's researches on optical theory, in particular the principle of transversality and the laws of the transmission and reflexion of light for transparent media, whether isotropic or otherwise, placed the theory on a firm basis, and henceforward inquiry was directed towards discovering the nature of the medium by whose means light is propagated. The fact that transverse vibrations can be propagated in an elastic solid doubtless suggested the elastic solid theory of the æther, and it was proved independently by Cauchy and by Green that this hypothesis gives results which are in agreement with Fresnel's laws for the transmission and reflexion of light in the case of isotropic media, but does not give Fresnel's wave-surface in the case of anisotropic media. They further proved that to obtain Fresnel's wave-surface in this case it was necessary to introduce extraneous forces. In his investigations Green applied Lagrange's dynamical method, and for this purpose he constructed the energy function of an elastic solid medium, in the course of the discussion determining the condition that transverse vibration should be propagated independently of the longitudinal vibrations. The process is capable of being reversed, and this was the method adopted by MacCullagh. He constructed an energy function which satisfied Fresnel's laws, but it is not the energy function of an ordinary elastic solid medium. The hypotheses of a labile æther or of a gyrostatically-loaded medium, gives this type of energy function, but does not differ materially from the elastic solid medium subjected to the action of extraneous forces, as the first hypothesis necessitates the application of forces over the boundary, and on the second hypothesis there are extraneous forces distributed throughout the medium. It should be noted that the energy function constructed by this process is not the most general kind of function which will lead to Fresnel's laws, it is limited by the assumption that it is a quadratic function of the strains and of the rotations of the medium.

Faraday was the first to advance the hypothesis that the phenomena of light and electricity were related, and light was identified as an electrical phenomenon when Maxwell proved that the velocity of propagation of an electrical disturbance is the same as the velocity of propagation of light. The application of Faraday's laws to the circumstances of the propagation of a train of waves in transparent media led to Fresnel's results, and thus the electromagnetic theory of light was placed on a firm basis.

The electrokinetic energy function in space devoid of matter which follows from Faraday's laws depends on the electrokinetic momentum and on the displacement current at each point of the space. This energy function has been replaced by another function which depends on the magnetic force at each point of the space. The method used generally to derive this second function from the first involves an integration by parts, a process which is invalid in this case. It might be contended that this second form of the energy function is

valid, although the process of its derivation is not valid; but the question admits of being tested. It has been proved that, using the form of the energy function which expresses it in terms of the magnetic force, if light is propagated across a space on which a magnetic field is imposed, the velocity of propagation of the light is altered; but, if Faraday's laws are applied directly to this problem, they give the result that the velocity of propagation of the light is not altered, a result which agrees with observation. Thus the second form of the energy function, which expresses it in terms of the magnetic force, is inconsistent with Faraday's laws. Further, it may be observed that, if Faraday's laws hold for a definite set of axes of reference, their mathematical expression for a set of axes of reference in motion relatively to the first set of axes has a different form.

In his treatment of the Michelson-Morley effect, Lorentz uses the form of the electrokinetic energy function which depends on the magnetic force, and finds that the relation between matter in motion relatively to a set of axes of reference and matter at rest relatively to this set of axes of reference is given by a transformation connecting the space and time co-ordinates in the one case with the space and time co-ordinates in the other. If, however, Faraday's laws are applied directly to the problem on the assumption that the intermolecular forces are of electrical origin, it is found that the relation between matter in motion relatively to a set of axes of reference and matter at rest relatively to this set of axes is given by a transformation connecting the space co-ordinates in the one case with the space co-ordinates in the other, while the time is the same for both. It follows that the hypothesis known as the modern theory of relativity is unnecessary for the explanation of the Michelson-Morley effect.

The position can be summed up as follows: The foundation of the modern theory of relativity is the Lorentz transformation. The form of the Lorentz transformation is a consequence of the form of the electrokinetic energy function used in its derivation. This form of the electrokinetic energy function is inconsistent with Faraday's laws.

The correspondence between matter in motion and matter at rest relatively to the same set of axes of reference, which is necessary to account for the Michelson-Morley null effect, is a direct consequence of Faraday's laws, if intermolecular force is of electrical origin; and this correspondence is independent of time.

H. M. MACDONALD.

VI.—CRITICAL NOTICES.

Grundfragen der Wahrnehmungslehre. Zweite Auflage. By Paul Ferdinand Linke. Reinhardt, Munich. Pp. 430. 13 M.

This is the second edition of Dr. Linke's book, and contains further matter in which he replies to his critics, and which serves to make his position at once clearer and more difficult to get straight. He gives many résumés of his position, but they do not always seem to be consistent with what has gone before. Throughout the whole book, however, one can feel that refreshing anxiety for clarity of expression which experience has led us to expect from such writers as Russell, Moore, and Broad, and from so few others. The difficulties we experience in understanding Linke's position spring rather from apparent inconsistencies from place to place than from obscurities in individual passages. His examples are frequent, clear, and 'every-day,' and he is never tired of saying the same thing in a variety of ways in order to make sure that he has done his best to make himself understood.

He is a phenomenalist, a follower, to a certain extent, of Husserl, and a champion of something very like the sense-datum in consequence. Experiences, he tells us, are the subject-matter of Psychology and physical reality is the subject-matter of Physics, but is that all there is to talk about? What is to be done with the red of red patches, or, rather, what is to be done with the red of this red patch which I have in front of me? There are two sorts of remarks which can be made about it. You can say that it differs from yellow, that it resembles yellow more than green, and that it must be attached to a shape having some kind of position, or you can say that it is as a matter of fact attached to that circular shape there near the door. The first kind of remark is the unfolding of something which is implied by 'red,' the second is an assertion which is not necessarily true. But neither kind of remark can be appropriately applied to anything which is psychic, and, according to scientists, whose business it is to make lists of physical existents, red is not to be found in their domain. What, then, are we to do? Why should we not make a third level of things (*dritte Schicht*)—the given (*das Gegebene*)? Philosophers are shy of this simple way out; they may be convinced of the reality of the psychic experience, and the reality of the physical object, whether it is best manipulated by billiard-ball or wave mathematics when we wish to predict its behaviour, but they often

suffer from Meinong's ' Prejudice in favour of the Real ' (*Vorurteil zugunsten des Wirklichen*) and shudder at what appears to them to be an act of creation.

The German language seems to be made for the tortuosities of philosophic thought ; what are usually held apart can be synthesised into a word, and distinctions which, for those who speak another language, thought alone can appreciate, can be made by the alteration of a prefix. Whether this extreme flexibility is all to the good is a question, but no one can read this book without envying the writer the instrument which he wields with such dexterity. I have hinted at a possible danger ; can one play the existential theme with variations on Sein, Dasein, and Sosein, and always be more than merely plausible ? Linke flings prejudice overboard ; the psychic acts of perception and imagining are both directed on to something, they are by their very nature ' intentional '. " Consciousness," he writes on page 117, " is ' *seinem Wesen nach* ' always more or less directed on to that which is outside (*Aussenseiendes*), on that which is non-ego (*Ichfremdes*)," and the characteristics of what we imagine or what we perceive are logically independent of our perceiving and our imagining, they are often absent from the physical world, they—in their own right. What word shall we use to fill in the gap ? What, in fact, is their status ?

Joseph Geyser complains that Linke's *Gegebenes* is to have " *eine dritte Schicht des Seins* " independent of reality in the ordinary conception of the term, which means that " castles in the air will have *Dasein* " ; and, in view of what had been said before, it seemed that Geyser was fair in his account ; but " my position is correctly put in these words only if the words ' *Dasein* ' and ' *Sein* ' mean nothing but what would be meant by ' *Gegebensein* '. Something quite false would be imputed to me if, which is the most obvious interpretation, they were used as equivalent with *eigentlichem* ' *Dasein* ' or ' *an sich Sein.*' " Is there not a hint of prejudice in these words ? If you are going to give the objective any *Sein* at all, why not have three sorts of things, or more if required, which are all of them existents in the same sense ? For once the presence of so many words seems to lead to an unnecessary muddle. What is the objection to making the *Gegebenes* which I perceive, and which I theoretically relate to a physical object, as real in its *Sein* as my perceptual event, and the physical object to which I ' refer ' it ? Such objections as might be raised—*e.g.*, that I see the shape of the physical object, but not the colour because it has not got one—cannot be answered by denying the ' *eigentliches Sein* ' of physical and psychical things of my *Gegebenes*, and reducing this to mere ' *Gegebensein* '. The third level (*Schicht*) is not so much a level of being as another kind of things, and it seems paltering to play with compounds of *Sein* rather than grant such things complete being.

The next question is, how is the *Gegeben* related to the psychic ? The straightforward story of physical causality is assumed in part.

There are non-physiological physical happenings which cause physiological happenings, then there is an acknowledged mystery, and then comes an act or event. The word 'act' is admitted to be unfortunate, but it does not matter because it is treated as a technical term meaning a perceptual or imagining happening, and carries no specific 'act'-implications with it. With the act comes the objective which is *Aktfremd*, and the stuff of the act, which is *Akthaft*, is a doubling of the objective, that is to say, there is what he calls a 'Koppelung': every act of perception has as one of its characteristics the 'being a perception of this or that'. Now on page 118 it is admitted that being apprehended (*erfasst*) is a characteristic which may belong to some '*Gegenständen des Aussenseins*'; but when this happens a quality is added which does not alter the character of the *Gegenstand* per se, which is independent of the perceiving and the imagining. Again, on page 363 in the summary the '*Aussengegenstand*' is described as "Etwas von mir in *jeder Hinsicht*" (my italics) "Unabhängiges". In both cases the objectives talked about are not the physical objects but belong to the *dritte Schicht*. The *Aussengegenstand* in the last example is one from which it would be false to infer a physical object, that is to say, it is such an objective (or *intentionaler Gegenstand*) as an hallucinated or imaged giant. It has no place among existents as ordinarily conceived, and if I localise it in this room or at a certain date and time, the temporal and spatial qualifications—the *Diesartigkeit*—spring from myself, "aus der Gesamtheit meines Psychischen Seins"; nevertheless, apart from that, it is independent of me '*in jeder Hinsicht*'. Logically independent? If it is of the very nature of the psychic acts to be *intentional* —directed-to—it seems as though it might also be of the very nature of the given to be given-to, and that, while we admit that the qualities of the given are other than the qualities of the perceptual act, the two fields cannot be so completely independent as Linke's words seem to imply. In another passage (p. 156) he speaks quite clearly. "We emphasise once more what is obvious for the understanding of our position, that by '*Aussengegenstand*' we do not mean the real object. . . . The immediately given *Aussengegenstand* is—given and that means (*und das heisst*): it is given to an I or the I apprehends it." If we agree that a perceiving requires a perceived and if, further, a perceived requires a perceiving, the questions are (1) whether Linke's realm of *Gegebensein* is identical with the perceived, which, from what he says about not-noticed qualities does not appear to be the case, and (2) if it is not, whether he has any justification to make it transcend the perceived. Surely we have been forced to accept the world of the phenomenal as distinct from the world of physics because *what we perceive* cannot be identified with that world. Is 'being perceived' a mere qualification which sometimes applies and sometimes does not in the realm of the third level? In coming to a conclusion it must always be borne in mind that what I see is a phenomenal aspect-of-a-table and not a phenomenal aspect of a phenomenal table, a point which language veils.

But apart from such considerations, Linke himself does not always write consistently. On page 128 we read that psychology is concerned, among other things, with dispositions, which include the conditions for such conscious experiences " die bei ihrer Aktualisierung zugleich gewisse Qualitäten zu Gegebenheit bringen ". On page 133 we are told that as the mirror-picture is conditioned by the mirror and its real existence—" Genau so ist auch das Rot durch die reale Existenz eines psychischen (oder Psychophysischen) Verbandes lediglich bedingt ". And on page 191, where he discusses the instantaneous apparition of the objective when the act occurs, he says : " If the act be destroyed then is the ' zugehörige Gegebenheit des Gegenstandes ' at once destroyed." Is it the phenomenal itself which is conditioned, or is it only its *Gegebenheit ?* The *Sein* of an *intentionaler Gegenstand* is hard to estimate from the quotations given above, particularly when we are told that it is *Gegebensein.*

A great merit of the book is that a stand is taken on the fundamental tautology of phenomenalism—what I perceive I perceive. Hallucinations and percepts are brought to one level, and percepts and images are regarded as being entirely distinct. The nature of the difference is open to question, but it is gratifying to get away from such theories as make images a weak kind of percept, or, worse still, weak sensations. The difference is said to lie in the act rather than in the objective of the act. I can see a red patch, picture an ' imaginary ' red patch, and have a memory image of the red patch which I saw. Linke wants to make out that the red patch which I see is identical with the red patch which I image-wise remember, only differently apprehended, and that the imaginary red patch is at least the same kind of thing as the seen red patch. In fact, there is a world where the red patches have their doubtful being and into this world we can peer in two ways, one of which, the image-wise way, is subdivided into memory and imagination. As has been said before, some of the qualities which we see there are the qualities of the physical object itself. Now if the objectives ' look ' different —typically different—when we image, from the way they ' look ' when we perceive, can we justifiably lay this difference to the score of our mode of looking ? And when we say that in imagery we have a " more or less incomplete ' *ergreifen* ' (' *erfassen,*' ' *haben* ') which is in no way identical with the ' *ergreifen* ' of something which is incomplete " (p. 393), we seem to be drifting away from the standards of pure phenomenalism. It is odd that we should come upon this remark, because on page 177 Linke deals admirably with the concept of clarity of perception and calls it a ' *Normbegriff,*' pointing out that the unclear percept is clear in its unclarity, but compared with other percepts of much the same appearance it is lacking in clarity —the unclear percept itself remains inviolate in its own right. Why, then, should not the incompleteness of the image be a character which it has as compared with the standard objectives of normal perception ? We have, for obvious biological reasons, a prejudice

in favour of a certain norm of objective, which stands high in the scale of clarity, and which is spatio-temporally surrounded by other objectives which we expect, and any objectives which do not come up to this standard, such as the objectives of imaging (sometimes) and hallucination, are given low marks; but when we come to deal with objectives per se they are all 'as good' as one another.

There is, however, an ultimate difference between images and percepts, and Linke tries to describe it. When we perceive (hallucination, of course, included) an object, it appears to be the region whence originates the perceptual act ('*Ausgangszone des wahrnehmenden Aktes*'). In memory we apprehend an experience, "es besteht ein aktuelles Erlebnis, das zunächst ein anderes Erlebnis intentional erfasst" (p. 208), and, later, "'I remember a note I have heard before' means: I apprehend (*erfasse*) a former experience, which for its part apprehends a note" (*einen Ton intentional erfasst*—the present tense is interesting). Imagination, as distinct from memory, is experientially only different because there is an individuality-index in the latter which is either absent or artificial in the former; both are experiences which apprehend experiences, Chinese-box-wise (he calls them '*Schachtelerlebnisse*'). Is this a convincing description of what is characteristic of imagery? It seems to me that I do not necessarily apprehend an experience when I have a mental image, and, in fact, very seldom is that the case. It is clear that Linke believes this to be a *descriptive* account, pure of all theorising as to the necessary conditions for memory or imagination, because on page 215 he expressly declares that it is by no means proven that every image can be traced in whole or in part to perceptual experience. But even if it were a good descriptive account there seems to be a hitch somewhere, because he is describing a difference between the objectives of perception and imaging, whereas the difference, according to him, lies in the act. In the second quotation from page 209 the verb '*erfassen*' is used in two senses; when the experience is *erfasst* the act is a *Vorstellungsakt*, when the note is *erfasst* it is a *Wahrnehmungsakt*, but no one would guess it.

There are more pitfalls for the thorough-going phenomenalist when we come to unnoticed qualities of the objective. If you look at a polygon and are asked, 'How many sides has it?' you may not have noticed; you may now count and say 'six'. Did it always have six sides, or is the polygon which you see as having six sides a new object, as Driesch is inclined to say? This is too reckless for Linke; a hexagon has six sides by nature, and to see a hexagon and deny that it has six sides is sheer nonsense. There seems some confusion here between processes that make a figure 'look' different, and propositions which I can or cannot make about what I have before me. What would be meant by saying 'I now see the figure *as* having 6 sides'? It might mean that I had counted the sides, and thereby *saw* an organisation, say of three sets of two sides somewhat symmetrically arranged, in which case the 'look' of the figure

has changed after I have been through the process of counting the sides; but it might mean that I now had some new information which left the 'look' of the figure unchanged, while enabling me to make a proposition about it. It would seem that there are qualities which are not seen because non-perceptual by nature, and qualities the discovery of which may alter the 'look' of the objective, so that to say that I do not notice a quality need not necessarily mean that it was there *to be noticed*, in the sense of to be perceived; it may be merely that I did not make a judgment which I might have made. But what if I look at an object and do not notice its colour? Here there is a difficulty of language, because we have no utterance which conveys the experience of an unnoticed colour. We obviously do not mean that there was no colour, and it is not a correct description to say that what we saw was 'blue-but-unnoticed,' which is what 'I did not notice the colour then, but I see now that it is blue' sounds like. It is an undifferentiated-colour, as a quality on its own, which is before us, rather than a colour which we do not differentiate. Language is formed for progressive characterisation and there we have differentiation; there is no way of conveying the characteristic undifferentiatedness of the fleeting glance. When he treats this problem Linke declares in favour of unperceived qualities, but he does not make the distinctions which have been dealt with above. For him the 'unnoticing' is the same whether we do not notice the notes of which a chord is made up, or whether we do not notice that the angles of a triangle make two right angles. For us a chord in which the constituents stand out is a different objective from the 'same' chord unanalysedly heard, but a triangle may be the same objective, before and after we make propositions about its angles. The problem of whether the chord was always composed of its parts as analysed in a subsequent perception, is a different one from the problem of whether the triangle has its angles equal to two right angles, even when we do not make the judgment in question.

When he is dealing with problems incidental to the perception of form Linke is at his best. He throws over sensations and the 'constancy-hypothesis,' and he stands by his dicta. Every objective, however evanescent (he would say 'in its *Gegebenheit*') and however indescribable in its phenomenal vague undifferentiatedness, has form and matter. We can speak of each in abstraction, and when we speak of the matter, we are speaking of what others reify and call 'sensations'. Sensations do not, as Koffka says, emerge out of perceptions but are logically, not temporally, secondary to perceptions. In attacking Koffka, Linke is taking him very much *au pied de la lettre*, which is, of course, quite legitimate, but when he (Koffka) says that sensations are the artificial products of psychological laboratories he really seems to mean very much what Linke himself means, though it is expressed in unhappy language. Both agree that perceptions are immediate, and not built up out of sensations, and both agree on the other point that one cannot assume that

when the stimulus remains the same the percept will remain the same also, and then introduce unconscious acts of judgment to save one's face when this does not happen.

A large section of the work is devoted to an analysis and criticism of the Wertheimer experiments on illusory movement and his interpretation of the results. This is particularly interesting because Linke himself has been independently engaged on the same problem. He is *en principe* against the physiological 'explanation,' and points out that it is no explanation at all. He holds out for a purely descriptive account without any theoretical prejudices. This is all to the good. One of the most fertile sources of muddle in the psychology of perception is the confusing of description and theory, of objective and physical object; the expression: "Fixate the stimulus," which falls so easily from the lips of experimenting psychologists, is, from a theoretical point of view, a question-begging command. What, then, happens in illusory movement? Under one set of circumstances, first we see an oblique line and then a horizontal line, and when the physical conditions are altered progressively in a certain direction, we see a line in an oblique position moving to a horizontal position, or rather we see a line in an oblique position and the same line in a horizontal position, and movement is involved. The odd thing is that the intermediate positions are not occupied at all—there is that impossible thing a *Bewegung ohne Bewegtes*—but it is quite clear that the movement in question is in no way *inferred*. Linke connects this phenomenon up with a variety of perception which he calls (and with no presuppositions) 'assimilative perception'. The cold touch of the ice, the gaiety of the expression, and the circularity of the shape where we have a circularly-arranged group of dots are all forcibly borne in upon us. The image-wise fillings-in partake of the 'reality suggestion' of the actually perceived, and Linke admits that they lose their image quality and enter into a *sui generis* synthesis. Again language is a difficulty; of course the totality seen is 'actually' seen, but the coldness is not perceived in the same way, as based in something outside, as is the *seen* part of the ice percept. Linke throws over all association theorising and leaves us with the bare fact. The only question is whether his referring of the added elements to the realm of imagery is altogether justified. However, an imaginal movement is added in the case of illusory movement, and: "I see two *Gegebenheiten* in different places, but I see them as conditions (*Zustände*) or phases of one single object to which they both *zukommen*" (p. 306).

He says on page 285 that if the two end-phases are very unlike one another no movement is added, but he might have mentioned certain intermediate cases of unlikeness where movement is perceived. The present writer performed some experiments in which the first objective could be seen either as two crossed lines or a St. Andrew's cross, while the second objective was a horizontal line. When a cross was seen the movement was a flapping forward, and

when two crossed lines were seen there was a 'scissor' movement in the plane at right angles to the line of sight. In both cases the illusion of identity was present.

In spite of the difficulties we have mentioned, Linke's book is of very great value. He discusses the history of the concept of content (*Inhalt*), he brings the views of many other important writers clearly before the reader, and by energetically dismissing associationism, the constancy-hypothesis, and the sensation, he performs a service which it is hard to over-estimate when one thinks of the laxity of thought displayed in the common run of psychological text-books. Every problem is, as it were, brought out into the open, there is no aphoristic obscurity. There is, it is true, occasional apparent inconsistency, but the air which we breathe throughout the whole discussion is invigorating, and there are few books on this subject which are as helpful as this one towards clarifying the mind of the reader even if he finds himself on some points in disagreement with the author. It is indeed sad that, to use his own words, "es sich literarisch nicht so ausgewirkt hat, wie das um der Sache willen wohl wünschenswert gewesen wäre".

W. J. H. SPROTT.

The Intelligible World: Metaphysics and Value. By WILBUR MARSHALL URBAN, Stone Professor of Philosophy in Dartmouth College. London: George Allen & Unwin Ltd.; New York: The Macmillan Co., 1929. Pp. 479. 16s.

THIS book is certainly one of the most interesting and important contributions to philosophical literature that have appeared in recent years. It is a defence of Idealism—not, of course, in the sense of Subjectivism, but in the sense of a spiritual interpretation of the Universe on lines similar to those of Plato and Aristotle among the ancients and Leibniz and Hegel among the moderns. Its author is already well known by his book on *Valuation: Its Nature and Laws*, which was, I believe, the first systematic treatment of the general subject of Value, in the philosophical sense of that term, that had appeared in English, and which is still among the best. He has also written several important articles on the subject.[1] The present work is an attempt—I think, on the whole, a highly successful attempt—to explain more fully how Value may be taken as the fundamental principle in the interpretation of reality. It would probably be almost universally conceded that this is the central problem of what is now meant by an 'idealistic' philosophy; and

[1] Especially 'Value and Existence' in *The Journal of Philosophy*, Vol. XIII., and an article on *Philosophy To-day* (The Open Court Publishing Co., 1928).

there are certainly few, if any, who are better qualified to deal with it than Prof. Urban. His views have, of course, been derived, to some extent, from such writers as Meinong, Rickert and Troeltsch; as well as from Bosanquet and other English writers who have taken their inspiration from Greece and Germany. A list of the chapters may serve to indicate the scope of the work: (1) The Great Tradition and Modernism in Philosophy; (2) The Prejudices of the Philosopher; (3) Genuine Knowledge and '*bona fide* Logic'; (4) Metaphysics and Value Theory; (5) The Return to Perennial Philosophy; (6) The Form of Philosophic Intelligibility; (7) Space, Time and Value: the axiological interpretation of Space and Time; (8) Origin and Value: Potentiality, Matter and Spirit; (9) Intelligible Evolution; (10) Intelligible Finality and the Problem of Destiny; (11) Intelligible Progress: the Form of History; (12) The new Götterdämmerung: Degradation and Value; (13) Headlining the Universe: the System of Philosophy.

His method of treatment is largely—perhaps rather too largely—polemical. A considerable part of the book is occupied with a critical account of attempts that have been made to interpret the world or human life with the omission or subordination of the idea of Value, or with its 'transvaluation' in a sense that destroys its significance. The discussion of these attempts in recent philosophical writings is of a comprehensive and detailed character. It is packed full of accurate knowledge and wise suggestions, often brilliantly expressed. It is perhaps to be regretted that so many of the references are to a number of articles in a variety of philosophical journals. But perhaps this was inevitable. It is not an easy book to read. It is certainly one of those that, in Bacon's phrase, have to be 'chewed and digested'.

Prof. Urban begins by making a rather sharp division between the sheep and the goats. He maintains that there is a 'great tradition'—or, as he sometimes calls it, a 'magnanimous tradition'—in the development of philosophy of the constructive type; a tradition of which the first beginnings, if not even the most convincing expressions, are to be found in the writings of Plato and Aristotle; while the later developments are contained most explicitly in the works of the German idealists, especially Leibniz and Hegel, and of those more recent English writers who have sought to interpret the Hegelian philosophy and to apply its principles to the problems that are raised by modern science and modern life. Bosanquet is selected—I think rightly—as the best representative of this attempt. This more or less continuous tradition in philosophy is contrasted with the work of a somewhat heterogeneous body of writers who are classed together under the not very descriptive title of 'modernists'—of whom Nietzsche is taken as perhaps the most extreme instance—writers who have formulated or suggested philosophical views of a more or less definitely sceptical character, by the omission or 'transvaluation' of the ultimate axiological conceptions. That way,

Prof. Urban conceives, madness lies; as, indeed, the instance of Nietzsche may be held to show. The number of these writers is legion; and Prof. Urban has displayed great diligence in tracking them down. His criticisms are searching, but by no means unappreciative. Even Nietzsche is treated with great respect throughout; and is referred to in one passage (p. 216) as displaying 'his usual insight'.

As a somewhat humble follower of the 'great tradition,' I find myself in general agreement with Prof. Urban's main contentions; and, if I venture to make some adverse comments on the details of his treatment, they must not be taken as being offered in any spirit of antagonism, but only as indicating certain respects in which his arguments seem to me unconvincing or his criticisms in some degree unjust.

I may begin by expressing some doubt as to whether the general antithesis between a magnanimous tradition and modernism is quite satisfactory. The former designation is suggested by Berkeley's contrast between the 'great philosophers,' with their sense for what Sir Thomas Browne called the 'magnalities,' and the 'minute philosophers' who interest themselves in analysis rather than in gaining a comprehensive outlook on human life. I should suppose that most of us have now become convinced that analysis and synthesis can hardly be thus sharply opposed. Modern analysis—especially on the more purely material side—has been carried much farther than any one in Berkeley's time could have anticipated; but this analysis has been directly connected with an enlarged conception of the universe in which we live. Prof. Alexander, for instance, who is referred to in this book as one who does not belong to the great tradition, has put forward a view of the spatio-temporal system which can hardly be said to be lacking in 'a sense for the magnalities'. To this I may refer again later. I suppose it is partly on this account that Prof. Urban has been led to contrast the great tradition, not with 'minute philosophy,' but with 'modernism,' a term that can hardly be said to convey any definite philosophical significance. The meaning that is most readily suggested by this term is that in which it is opposed, not to such philosophies as those of Plato and Hegel, but to the Catholic tradition in religion—a tradition which does, of course, have a certain connection with Plato, through Aristotle and his interpreter, St. Thomas Aquinas. It happens, indeed, that a book was published almost simultaneously with *The Intelligible World*, in which the term 'Modernism' is used in this way—*viz.*, Mr. Hilaire Belloc's *Survivals and New Arrivals*. The writers to whom Mr. Belloc refers are rightly regarded as representative of views that are distinctly modern;[1] whereas those to whom Prof. Urban refers are, in many cases, not very unlike the

[1] The term 'modernist' is used in a similar way by Prof. H. L. Stewart in his interesting book on *Anglo-Catholicism*.

ancient thinkers who are commonly referred to as Sophists, or even some of the earlier Greek philosophers. This, however, is only a verbal objection. It should be added that Prof. Urban himself admits (p. 35) that the way back to the great tradition must be through modernism. What this means is chiefly, it would seem, that the modern conception of evolution has to be, in some form, accepted by the 'magnanimous' philosophers, as well as by the more 'minute' ones. The real antithesis in this book, as I understand it, is that between those who use the conception of value as an interpretative principle, and those who are sceptical of any such application. It is really round the conception of Value that the whole controversy turns. The use of this conception in philosophy may be said to be a 'tradition,' in the sense that it has been derived largely from Plato. Accordingly, Prof. Urban begins with an explanation of the exact sense in which the term is to be understood and the range of its application.

A good deal of attention is given at the outset to its place in Logic, which, he urges, should be definitely regarded as a 'normative' study. He quotes, with approval, the saying of Herbart that 'Logik ist die Moral des Denkens' and of Bosanquet that 'the spirit of logic is love and the spirit of value is logic'. He seems to complain a little, however (pp. 127-128 and 458-459) of the too great limitation of the conception of value to knowledge in the work of Bosanquet and others. I think he might have referred with advantage to Bosanquet's paper about this, read to the Aristotelian Society and published in the volume of Essays to which it supplies the general title, *Science and Philosophy*. In that paper Bosanquet confessed that, at the time when he wrote his *Logic*, he was inclined to regard that subject as the whole of philosophy; whereas he afterwards came to see that philosophy includes the three normative studies—Logic, Ethics and Æsthetics. It is true that it was at a comparatively late stage in his career that he reached this conviction; but at least he made very ample amends for the initial limitation of his outlook. Indeed, I am not sure that Prof. Urban himself might not be quite as justly charged with an undue subordination of the ethical and æsthetical aspects of value. The element of time enters into these, especially in the case of moral action; and it seems to me that a certain depreciation of the temporal element in experience is rather characteristic of his general outlook. Perhaps it tends to be somewhat characteristic of speculative philosophers in general. The philosopher seeks to be a 'spectator of all time and all existence'; and he may be apt sometimes to forget that that of which he is a spectator has the aspect of transience and—what is perhaps even more important—the aspects of creativeness and endurance. Without these aspects, it is difficult to see what would be left of the ethical and æsthetical aspects of value. I think it may be well to emphasise this a little, as it seems to me that the chief weakness in Prof. Urban's work springs from an insufficient appreciation of these aspects.

There is indeed one passage (p. 379) in which the significance of temporal order, from the point of view of value, is very happily illustrated in a quotation from a paper by Dr. L. P. Jacks, which it may be worth while to reproduce. 'Suppose,' he says, 'you were able to show that up to date the amount of happiness in the world has shown a steady increase until it has reached the grand sum total now existing. Now suppose that you were transferred to another planet where the conditions were the exact opposite; where the inhabitants, ages ago, started with the happiness we now possess and gradually declined until at the present moment they are no happier than the human race was at the first stage of its career. Now add together the totals of happiness for both your worlds—the ascending world which starts with the minimum and ends with the maximum, the declining world which starts with the maximum and ends with the minimum. The grand totals in both cases are exactly the same. So far as the total result is concerned, the declining world has just as much to show for itself as the ascending. Valued in terms of happiness, the one would be worth as much as the other. And yet we know that the value of these two worlds is not the same.' It is not the same, I should suppose, mainly because one of them contains the moral and creative values which the other lacks. These values involve a temporal process; and, with regard to this also, I find Prof. Urban's treatment somewhat disconcerting.

If we are to take Plato as our guide, it seems natural to turn to the *Timæus*, where the world is interpreted as a creative process in which the Demiurge is guided by the Idea of Good. Some recent writers, such as Prof. A. E. Taylor, have maintained that the views expressed in that Dialogue are not to be regarded as Plato's; and perhaps that view may be taken by Prof. Urban. But it is difficult to believe that Plato did not at least think that the general conceptions expressed in it were deserving of serious consideration. It is certainly hard to see how an intelligible conception of the world, as guided by the idea of value, could be worked out in any other way than that which is there indicated. Some modern writers, such as Prof. Alexander and Mr. Douglas Fawcett, have made considerable use of the ideas expressed in the *Timæus;* and they are both rebuked (pp. 265 and 446-447) by Prof. Urban. I should be disposed to break a lance in their defence, though I cannot follow them altogether. It is certainly not easy to think of Prof. Alexander as one of the 'minute philosophers'. It is, I think, true enough to say, as Prof. Urban does, that the place of value is not made sufficiently prominent in his general treatment of the cosmic process; but Alexander does at least represent that process as being directed towards something that looks very like the Platonic conception of Good. It must be admitted that its significance was not fully brought out in the first impression of *Space, Time and Deity;* and perhaps Prof. Urban may not have seen the second impression, in which the conception of 'Deity' is explicitly distinguished from that of God. 'What I say

is' he states in the Preface to the second impression, 'that God as actually possessing Deity does not exist; but God as the whole universe tending towards Deity does exist. Deity is a quality, and God a being. Actual God is the forecast and, as it were, divining of ideal God." There is a slight play on words in this statement; but I think the meaning is clear enough, and it seems very similar to Plato's view of a Demiurge aiming at the Good. I should admit, however, that Prof. Urban's criticism of Alexander's distinction between 'fuller' and 'greater' reality is just.

As regards Mr. Fawcett's treatment of the subject, Prof. Urban's main objection has reference to the emphasis on the reality of the temporal process. Against Fawcett's depreciation of the conception of timeless reality (in his book on *Divine Imagining*), he quotes the saying 'Dem glücklichen schlägt keine Stunde'. I suppose it is true that one who is thoroughly happy is hardly conscious of the *lapse* of time. There may be no clocks in heaven, and there may be no sense of the *passing* of time; but surely *duration* is an important element in happiness. Even McTaggart (perhaps the most thorough and emphatic of those who deny the reality of time) seems to admit endurance in his account of the final realisation. I certainly fail to see how the idea of value can be fully employed in the interpretation of the Cosmos without some such conception of a creative process directed towards the supreme Good as that which is suggested in the *Timæus*. In characterising Time as merely phenomenal, Prof. Urban seems to me to be more Kantian than Hegelian. Even the Vedantists, who are very emphatic on the unreality of the temporal process, are forced in the end to describe it as the 'play' of Maya or Lila—an idea that is not far removed from that of a Demiurge. At any rate, 'play' can hardly be thought of otherwise than as temporal. To urge this is, of course, not to deny that the eternal is more fundamental than its temporal expression; nor is it to deny that 'all that is at all lasts ever past recall'; but to 'last ever' is surely a temporal characteristic. Pure universals, no doubt, may be said to subsist eternally; but a series of pure universals could hardly constitute an 'intelligible world'.

Prof. Urban himself seems to admit that there is a fundamental difficulty in his view. He confesses at least that he does not find it possible to give a completely intelligible view of the world without 'trenching on the mystical' (pp. 159, etc.). Lord Haldane, in one of the last things he wrote (his Preface to the translation of Hegel's greater *Logic*) denied emphatically that there is any mysticism in the philosophy of Hegel. The same might, I should think, be said about Plato. But it is true that in all the greater philosophies there is much that cannot be made clear to the 'understanding,' in the sense in which the understanding is distinguished from the reason. Perhaps this is all that Prof. Urban means. Even modern science (as represented, for instance, by Mr. Eddington) is becoming highly mystical in that sense. It is gratifying, at any rate, to learn that

we may expect a further contribution from him about this shortly. I understand him to promise a supplementary volume in which the concluding chapter is to be concerned with 'trenching on the mystical'. Such a volume would be very welcome. I certainly feel that the phrase is not self-explanatory. In the meantime, I am convinced that I am not the only reader who will be deeply grateful for the rich feast that Prof. Urban has provided. I congratulate him upon it most heartily. Its great merit lies in the thoroughness with which the idea of value is emphasised throughout, and the remorseless completeness with which its neglect or misuse is exposed. It is more and more coming to be recognised that the conception of value is the most fundamental in philosophy; and for English readers at least it has probably no better exponent than Prof. Urban, none at least who has vindicated its use with so much patience and completeness. The interest of his work lies, however, largely in its details, to which no summary could do justice.

J. S. MACKENZIE.

Histoire des sciences mathématiques dans l'antiquité Hellénique. GINO LORIA. Paris, Gauthier-Villars: 1929. Pp. 212. 30 fr.

Platons Verhältniss zur Mathematik. S. DEMEL. Leipzig, F. Meiner: 1929. Pp. v, 146. M. 6.

Quellen und Studien zur Geschichte der Mathematik, herausgegeben von O. Neugebauer, J. Stenzel, O. Toeplitz. Abteilung B: Studien. Band 1. Heft 1. Berlin, J. Springer: 1929. Pp. 112. M. 12.

THE name of Prof. Loria is sufficient guarantee for the excellence of his brief, but very comprehensive, account of the mathematics of antiquity. The general reader and the student of classical literature and thought who have not forgotten all their school mathematics will find in this little volume an admirably clear and simple, and at the same time a reasonably full account of the whole of the work done by the great Greeks and their pupils in the pure and applied mathematical sciences. Though there are already other good works in existence which deal with the subject, I do not know whether there is any which gives, in so brief a space, and with such a minimum of technical presuppositions, so masterly a summary and estimate of the achievement of the great figures of the golden age of ancient mathematics, Euclid, Archimedes, Apollonius, along with an adequate statement of the main detailed results attained by mathematicians of less celebrity, or concerning whose work we are more scantily informed. Such criticisms as occur to me are mainly of a very secondary kind. They amount to the two comments that Prof. Loria's account of the mathematical attainments of thinkers prior to the age of Euclid is not quite on the level of his treatment of the "golden age," and that his chronology is sometimes hard to

follow. Thus—and this is the chief criticism I have to make—I should say that one very important figure, Plato, suffers a double injustice. At page 133 something should have been said on a subject which has been wholly ignored, the Platonic theory of number presupposed by the adverse criticism of Aristotle (the doctrine, of the generation of number from the "one" and the "dyad"), and the attempt to deal with the problem of the "irrational"; the whole matter is in fact passed over in silence. And the account of Plato's astronomical theories is simply condensed (p. 164) from the various *opuscula* of Boeckh, though it should be clear, now that the correct text in *Timæus* 40, *c.* 1, has been restored by Burnet and Rivaud, that Boeckh's interpretation of that dialogue must be wrong on its central point, the ascription to Timæus of the doctrine of a stationary earth. I think it should also have been explained, in view of possible misunderstandings, that though the testimony of Theophrastus proves that Plato believed in a moving earth, there is every reason to believe that the centre round which he held the earth to be moving was not the sun. Among the chronological statements which puzzle me is that of page 15, according to which Archytas was a "pupil of Pythagoras". We do not know any precise dates for Archytas, but we do know on the evidence of Plato that he was still politically active at Tarentum in 361/360. Plainly then, he cannot have been a "pupil" of Pythagoras, who is referred to in the past tense by Heraclitus. Again (p. 38) Eudoxus is stated to have been *born* in 390 B.C., and to have died old. Now the only statements we have to go upon, so far as I know, are those of Apollodorus—which is as much to say Eratosthenes—preserved by Diogenes Laertius (VIII, 90). According to them Eudoxus died at the age of 52, and "flourished" *c.* 368-364 B.C. Thus Eratosthenes supposed him to have been born about 408-404 B.C. If Prof. Loria's dates were correct, Eudoxus would have been only thirty at the time of Plato's last visit to Syracuse, when he seems to have been left at Athens as acting head of the Academy. I suppose the singular statement of page 116 that the philosophic schools of Athens were finally closed by *Constantine*, on the eve of his conversion, is an unfortunate slip, since Prof. Loria shows himself elsewhere aware of the real date of Simplicius; but it is a very extraordinary slip. That the date of Plato's birth is got wrong by a year (p. 34), that there is apparently a confusion between Dionysius I. and Dionysius II. at page 45, that Thales is said (p. 13) to have "venerated the Egyptian priests as his masters," and to have taken to politics "at the end of his life," that Euclid and "the sophists" are incidentally made contemporaries (p. 49), and that Neo-Platonism is said to have originated at Alexandria (p. 108) are small matters which only prove that the writer has been following some rather unsatisfactory manual of the history of philosophy. (The blunder about the age at which Thales became a "public man" seems to be due to Diogenes Laertius. It is a misrepresentation of the fact, mentioned by Herodotus, that Thales gave

a certain piece of advice to the Ionians when the Persians were advancing to the Ægæan. There is no ground for supposing that he had not been interested in the public affairs of Miletus all his life long.) I mention these little things simply as matters which might be corrected in a second edition. Similarly, it is contrary to the ancient tradition to say that the politics of the Pythagorean order were " aristocratic " (p. 16). According to the tradition, it was from the " nobles " that the movement against the Pythagoreans started. Also, if Prof. Loria holds that the Sumerians were the " Semitic " element in the population of Babylonia (p. 3), he ought to give some reason for this unusual view. I note a few misprints, *e.g.*, 101, l. 18, IV for III; 116, l. 13, Isodore for Isidore.

Dr. Demel's essay on Plato's relations to mathematics seems to me an unequal performance, but I hesitate to speak very confidently, as I find the author's style and vocabulary exceedingly difficult to understand, and may have missed his meaning in more places than one. I confess myself sceptical about the attempt to construct a history of Plato's attitude which occupies Dr. Demel's opening pages. The theory is that Socrates knew and cared little about the subject (p. 9), and that Plato therefore took no interest in it either, until about the age of 30-35. He presumably made his first acquaintance with serious mathematics under Theodorus at Cyrene, after the death of Socrates. Like Hobbes he " fell in love " with the subject. Also, through Theodorus, he made the acquaintance of Theætetus, and became his bosom friend. Probably Plato and Theætetus together were concerned in the great discoveries by which Theætetus proved himself a mathematician of the first order. The proof of this is afforded by (*a*) the unusual warmth of feeling towards both Theodorus and Theætetus shown in the *Theætetus;* (*b*) the interest shown in the *Republic* in solid geometry, of which Theætetus was the creator; (*c*) the language of *Ep.* VII about the importance of τὸ συζῆν and the direct contact of one living mind with another, which *must* be reminiscent of the years in which Plato and Theætetus had pursued researches together.

Now this is a pretty story, and I confess that no one can demonstrate that it is not also a true one. But the evidence for it strikes me as being of the flimsiest. That Plato was more deeply interested in practical problems than in science in his early life we know from *Ep.* VII, and that, so far, is good reason for supposing that he had not paid exceptional attention to mathematics until long after the death of Socrates. But I can see no reason why he may not have known pretty much what could be taught him in the late fifth century without needing to travel to Cyrene. The passage of Xenophon (*Mem.*, IV, 7) quoted to prove that Socrates had no mathematical *Kenntnisse* really says the direct opposite. The whole point is that Socrates was thoroughly at home in the advanced mathematics of his time, and therefore it was not from ignorance of the subject that he held that there are things it is more important for a

young man to know. There is, again, no reason why Theodorus should not have visited Athens at the end of the fifth century, as Plato says he did, or why both Plato and Theætetus should not have been acquainted with him there. And the whole story of the extended travels of Plato between the death of Socrates and his fortieth year, as told by later writers, *seems* inconsistent with the language of *Ep.* VII. Finally, though the *Theætetus* shows that Plato had a high regard for his deceased friend as a man and a geometer, it is surely pushing the argument too far to infer that all that is said anywhere in Plato about "the necessity" of the shared life for philosophical progress *must* be said with reference to a *Herzensbund* with Theætetus in particular, and then to argue from the existence of this *Herzensbund* that Plato must have had a personal share in the mathematical discoveries of his friend. All these things may be, but I do not see that we can say more.

Again, it seems to me hazardous to attempt with Dr. Demel to support an hypothetical narrative by assuming a particular order among Plato's earlier dialogues on stylometric grounds, and then arguing that if a dialogue pronounced, on these grounds, to be early does not go deeply into mathematical questions, this shows that Plato's knowledge of the subject is still elementary. For example, the *Protagoras* only refers to mathematical topics for the purpose of suggesting that there must be some "knowledge" which would put an end to disputes about good and bad, right and wrong, as the knowledge of number and measure puts an end to disputes about size, weight, and the like. But how does this prove that Plato, when he wrote the *Protagoras*, knew nothing of mathematics? If he had known as much of the subject as Pascal or Gauss, there is no reason why he should have obtruded his knowledge in a discussion where it would be irrelevant. It seems to me that the right way to put what Dr. Demel is trying to say would be rather this, that until Plato had made up his mind, as he tells us in *Ep.* VII he did, that there was no place in the Athens of his day for a true statesman, he naturally wrote about the subjects which were always nearest to his heart. When he had convinced himself that for him the way to serve Athens was the indirect one of educating men into statesmanship, and that they can only be educated into it by science, naturally the problem of the aims and methods of science acquired a new importance for him. So far, I believe Dr. Demel is on the right lines, but I think it impossible to draw any conclusions about the extent of Plato's own early acquaintance with mathematical science.

I should say that there is more real value in the pages given to later dialogues, like the *Timæus* and *Philebus*. Here much of what Dr. Demel says appears to be true and important (*e.g.*, his account of what the *Philebus* tells us about *γένεσις εἰς οὐσίαν*, and his clear recognition that the *Timæus* contemplates the creation of what we still understand by a mathematical physic). But I still find traces of what seems to me unfounded over-interpretation. I do not

understand, for example, how it can be maintained that the *Parmenides* contains an exposition of "Plato's mathematical logic". If it does, Dr. Demel seems to me to have left the principles of that logic as obscure as he found them. Seeing that ostensibly the object of the bulk of the dialogue is to prove the alternative conclusions that (*a*) one can only affirm the things asserted by Parmenides about his "One," on the condition that one affirms their contradictories; and (*b*) one can only deny the things he denies of the "One," if one also denies their contradictories, it seems to me that we should "try out" the hypothesis that the dialogue is a satire on the logic of some one else, before one looks in it for the logic of Plato. And the particular problem Dr. Demel supposes Plato to be concerned with, "in what sense are the objects of the mathematician's study *given*," is one on which I cannot, even with his aid, find a word in the text.

Again, in spite of cordial agreement with much of what is said about the *Timæus*, I must draw the line when I am asked to regard it as an *Ueberwindung* of Democritus, or something of the kind. I can only ask, as I have asked before, for some real evidence that Plato knew anything of the work of Democritus. The proofs hitherto brought forward would at the most show that Plato knew something of Atomism; but this is accounted for, if we assume him to have had knowledge of Ecphantus, or even Leucippus, as an associate of Eleatics and Pythagoreans may be presumed to have had. Does Plato anywhere criticise, or even mention, any view known to have been specially characteristic of Democritus? For my own part, I do not believe that he does, and therefore I think we are in danger of doing an injustice to both men, if we treat the *Timæus* as intended for a criticism of the Abderite.

It is curious that Dr. Demel should have nothing in particular to say upon the one topic which one would have expected to be specially prominent in his essay, the Platonic theory of number so often criticised by Aristotle. Perhaps the reason is that the most important literature on the subject happens to be in French, and Dr. Demel follows the unhappy practice of some other German Platonic scholars, who seem to make a point of ignoring all work done on Plato by Frenchmen. This is a neglect which is bound to avenge itself. It does the French no harm, but it seriously affects the value of much German work.

It would be easier to appreciate Dr. Demel's contribution to the subject if he did not write what appears to be the technical language of some school of philosophy with which we are not all familiar, and to write it without any translation into common speech. I am probably myself unable to appreciate him fully from sheer uncertainty about the meaning of two constantly recurring phrases in his argument, *gültiges sein* and *Prinzip der Gültigkeit*. There are one or two painful misprints of Greek words, *e.g.*, στοιχειώτης for στοιχειωτής (p. v), ὄντοις (p. 58) apparently for ὄντα, ἐπιστήμαι (p. 119) for ἐπιστῆμαι.

Considerations of space forbid me to do more than recommend very heartily the first number of what promises to be a most admirable series of studies in the history of mathematics. According to the editorial programme, it is hoped to issue separately a series of *Quellen* and one of *Studien*. The first series is to consist of ancient mathematical works in the original languages, carefully edited with full critical *apparatus* and accompanying translations; the second is to comprise essays and studies of various kinds illustrative of the *Quellen*. The first number of the *Studien*, now published, contains three valuable studies dealing with matter specially interesting to the student of Greek philosophy; one by O. Toeplitz on "the relation between mathematics and the theory of Ideas in Plato"—a valuable contribution to the interpretation of Aristotle's account of the Academic theory of number; one by J. Stenzel on the meaning and history of the word λόγος in Aristotle; and one by F. Solmsen on Plato's influence on the development of mathematical method. Though I am forced here to abstain from further comment, I may be allowed to say that all three will be found to be of a high order. Two studies, one by O. Neugebauer, and the other by the same writer in conjunction with W. Struve, deal specially with Babylonian mathematics, and one by J. J. Perapalkin with an obscure passage of the well-known Rhind papyrus.

A. E. Taylor.

VII.—NEW BOOKS.

The Meaning of Beauty. By W. T. Stace. London: Grant Richards, 1929. Pp. 255. 6s.

A native book on æsthetics is so rare a thing that one turns to it avidly. The subject seems to be a little too vague for the characteristically English mind, and perhaps a little too intimate: our analytic powers are axe-like, biting best into the firmer textures, and even when, through the felicities of chance, they achieve a piece of delicate dissection, a reticence enters in and veils the success. Our æsthetic enjoyments embarrass us. Moreover, æsthetics repels us by its bad record, which time shows no hurry to mend: in the past it has been either degraded to an incidental deduction from general metaphysical premises or caught up into drifting clouds of oratory, while latterly it has become a game in a laboratory of ingenious toys, a statistical summary and solemn analysis of irresponsible questionnaires, an epilogue to the science of sub-human instincts, and a pontifical chapter in the psychology of sex. When treating of this subject almost every writer lays aside either his sensibility as an artist or his responsibility as a thinker.

It is the merit of Mr. Stace, known to us by his book, *The Philosophy of Hegel*, that he has justified his adventure into this academically disreputable field. Throughout he keeps an enviably clear head, with a consequent simplicity of exposition. More important, he is guiltless of the irritating mistake, not uncommon among those who write on æsthetics and the psychology or philosophy of religion, of offering an analysis of a type of experience never, or only barely, known at first hand; personal æsthetic memories are always by him. True, his sensibility is developed more in some directions than in others—for example, he sees no beauty in simple colour or pure sound and little in line—but that is the plight of all of us. Finally, he has given us a theory original at least in the terms of its statement and so stimulating that it probably contains more truth than I am able to discern.

He concentrates on the primary problem of æsthetics, namely, the definition of the quality that marks as a distinct kind a certain set of experiences that cannot be explained either by natural law or by the standards of utility, truth, and goodness. To this quality he appropriates the term "beauty," expanding its usual meaning to include sublimity, ugliness, comicality, etc. He enters the lists against the anti-rational tendency which has loomed so large in the present century. Æsthetic experience, he maintains, originates in a cognition ("the apprehension of beauty is cognitive in character" [p. 20] is unhappy; cognition *means* apprehension), the emotion being a mere consequent; correspondingly, a work of art expresses not an emotion but an idea. Further, the object is always concrete, is the object of *perceptual* apprehension, perceptual in the wide

sense that includes what has been known traditionally as inner perception; no purely conceptual object wears the garb of beauty. How, then, does æsthetic perception differ from ordinary perception? Emotion (and presence or absence of conative tendency) having been dismissed, we are forced to seek the differentia in the cognitive elements. The sensory element must be passed over because it is common to all perception whatever. Nothing remains, therefore, but the conceptual element. At first sight, it seems that here too we have something common, but a little reflection shows that there are three kinds of concepts: (1) perceptual, *i.e.*, empirical class-concepts, generalised percepts; (2) categorial; (3) empirical non-perceptual, *i.e.*, those which, though created through reflection on experience, have no perceptual counterparts, since they arise not out of homogeneous objects but out of large tracts of very varied experiences. Examples of the last kind are: order, progress, evolution, goodness. Of these three kinds, the first two enter into all perception; their concretion with sensation is what we mean by perception. The third kind, therefore, must contain the differentia we are seeking. Putting together the preliminary observation that æsthetic enjoyment emerges only before an object concretely and vividly experienced, and our result that the peculiar trait of the æsthetic object is the presence in it of an empirical non-perceptual object, we must conclude that beauty consists in, is constituted by, such a concept dissolved or integrated within the unity of a percept.

This definition is admittedly hypothetical—much of the book consists in testing it by application—but, we are told, it has two weighty theoretical advantages to commend it. Firstly, it leaves room for the ideal of a universally valid æsthetic judgment, for it finds the peculiar element of beauty in a concept, and a concept is that which makes a cognition objective. Secondly, it explains the pleasure of æsthetic apprehension. Empirical non-perceptual concepts first appear as free or pure concepts, as abstractions, and as such are recognised and felt to be imperfect; but in the moment of æsthetic perception they are plunged and lost again in a completing perceptual context, and the mind, finding one of its own creations suddenly acquire the vividness, concreteness, individuality of a percept meets the marvel of realisation with a pleasurable emotion.

I can only touch on the applications to Nature and art. When, on seeing an enormous gorge, I completely and involuntarily combine with my percept ideas like those of the might of Nature and the relative powerlessness of man, I have then, and only then, achieved an æsthetic reaction. Is not this forcing our perceptions into the literary mould? When I catch sight of the moon spilling its silver on a dark pool, is there not enough for the eye without bringing in the idea of peace or mystery? The applications to art are too many to follow here. The function of art is, of course, stated to be the giving concrete reality to empirical non-perceptual concepts. Since every such concept, fused with a percept, generates beauty, moral concepts do. The art that serves morality is bad art not because of its moral content, but because this content is left relatively free, incompletely fused (or, as in allegory, not fused at all).

The whole theory clearly rests on three principles—æsthetic apprehension is perceptual in character, it involves a concept of a particular kind, and it is always attended by pleasure. On the last I can only remark that it presupposes a far too simple psychology of feeling. The first two principles call for fuller comment.

"Perceptual" oscillates in the book between two meanings. Sometimes it designates all material that originates in perception internal as well as

external. This meaning is required to cover imagination, for in literature the æsthetic material is largely imaginative; in reading a drama, for instance, it is the images and emotions (along with their primary conceptual interpretations) expressed by the words, not the words as perceived facts (except in respect of word-beauty), that compose, according to Mr. Stace, the " perceptual " river in which the beautifying concept must be immersed. But at other times it is the reality-character of the perceptual that is emphasised; only when dissolved in a percept, it is said, does a concept become real, and it must become real to give æsthetic pleasure. Now the more this side is emphasised, the less can the theory be held to cover imagination, except when this has the clarity and irresistible address of perception—and I at least cannot think that hallucination or any reality-feeling whatever is essential to the æsthetic experience. Mr. Stace is in earnest about the point, for he writes that " beauty is the fusion of *true* conceptions with a perceptual field " (p. 208), though I can find no ground for the qualification italicised by himself except his confession that it is required to substantiate the belief that æsthetic judgments can claim universal validity. I may add that Mr. Stace deliberately leaves his notions of reality and truth vague, on the unfortunate supposition that these notions can be introduced into an æsthetic without committing oneself to a metaphysic.

Mr. Stace's second principle leads him to deny that there is any such thing as sensuous beauty. A colour or a musical note is beautiful only when it is informed by a large idea. If of itself it produces pleasure, the pleasure, like that of the taste of sugar, is determined physiologically; besides, anything sensuous requires only acuity of sense-organ to discern it, and lies in the realm of demonstrable fact. Here I can only reply that a single colour appears of itself beautiful to me, and that æsthetic experience is to be defined by its own felt quality, not by reference to causal factors. But a pattern of colours, a chord or chordal progression, or a linear outline? These at best, we are told, embody nothing more than ideas such as balance and regularity, an intellectual content " slight and primitive " and therefore of " a low order of æsthetic experience " (p. 119). It is refreshing to find the highest categories of the traditional æsthetics abased, but this virtual rejection of purely formal beauty is as unwarranted as making it the only kind of beauty. The claim that beauty always involves a large concept, however much it may be borne out by literature (in which sphere Mr. Stace is clearly most at home), is too narrow for the full range of æsthetic experience. Regarding music, for example, Mr. Stace may be right in referring us to physiology for the explanation of rhythm, but no explanation of *why* rhythm appeals to us can settle the question of the experienced nature of its appeal. And to say that the function of music is to portray a general attitude to life—like gaiety, sadness or solemnity—and that therefore music is " the most intellectual of the arts " (p. 184) is a strange confusion, for one of the outstanding features of a general attitude to life is, *de facto* as distinguished from *de jure*, its non-intellectual character; gaiety and sadness are indeed concepts, but generalised concepts of particular moods, not of the order Mr. Stace's theory requires. In any case, music is holding its mystery fast when all that you have to say of it is that it is the sensuous absorption or expression of ideas like those just mentioned. Neither does architecture yield its secret. When Gothic architecture is adduced as an instance of the principle that religious concepts are the chief determinants of builded beauty, one fears that the associations of its use have usurped, instead of crowning, its

intrinsic qualities. In saying that a Gothic cathedral expresses the Christian aspiration away from an evil world, Mr. Stace apparently overlooks the fact that the style sprang from the desire for formal harmony: once the pointed arch appeared as the solution of the engineering problem of neatly vaulting an oblong space, the need of bringing portals, windows, arcades, niches, etc., into kindred form was felt, and this need was, and remains, an æsthetic need, one that can be sufficiently felt and sufficiently responded to without any reference to religious conceptions. To take one more example: to require of every picture that it carry a large idea would, it seems to me, be too great a compliment to untutored taste. Surely the truth is that art may be illustrative, not that it must be. It does need to be insisted that, other things being equal, a work of art with intellectual content is more fully enjoyable than one without, and is still more enjoyable when that content is enlarged and deepened; but to affirm that such enjoyment is wholly æsthetic, that (fusion being assumed) the greater the intellectual content the greater the *beauty*, is to obscure the peculiarities of æsthetic experience which it is the office of æsthetics to illumine. The secret of beauty, at least in the materialised arts, is to be sought not merely in the humane ideas to whose expression the several materials may be bent, but also in the inherent relations of the ordered materials themselves, in the finished work as a sensible fact.

If I have lingered over criticism it is because the theory in Mr. Stace's hands is worthy of it, and if the criticism appear to be easy he could fairly plead that only the pale ghost of a book can flit through the lines of a review. Anyone who turns to the book itself will not lay it down without having been stimulated. Unencumbered with history, it is the most straightforward introduction to the study of beauty that I know.

T. E. Jessop.

The Philosophy of Spinoza: The Unity of His Thought. By Richard McKeon. New York: Longmans, Green & Co., 1928. Pp. x, 345. 25s.

Spinoza. By Leon Roth. (Leaders of Philosophy Series.) London: Ernest Benn, Ltd., 1929. Pp. xvi, 250. 12s. 6d.

The renewed interest in the philosophy of Spinoza which has found expression in certain prominent speculations of the present time, in the activities of the *Societas Spinozana*, and in Mr. Wolf's translations of Spinoza-literature, was certain, in due course, to encourage new attempts at more or less complete exposition of that philosophy, suitable for beginners and students generally. The books of Messrs. McKeon and Roth belong to this general class, and we may be grateful to them for occupying the ground, and thus excluding the futilities of mere hack popularisers. How far such works are really needed, with the volumes of Pollock and Joachim (and even Martineau, obtuse, but still to be reckoned with) easily obtainable, is open to question; though it is true that America has, as yet, produced no important native work on Spinoza, so that it will be well if Mr. McKeon's book is able to push aside the very amateurish accounts which so far have been current there. We must suppose that both writers felt that the results of the labour of scholars in the last quarter of a century offered a sufficient ground for their new expositions of the philosophy as a whole, in spite of the fact that to the mere outsider those results, where

they concern more than small details, seem meagre to an astonishing degree. The philosophy of Spinoza stands more in need, at the present moment, of philosophical synthesis than of learned anatomisation and historico-comparative treatment; and only when that has been done will the work of mere scholars begin to bear fruit. As an example of this we might mention the fashion of depreciating the part played by Descartes in the formation of the mind of Spinoza, and of emphasising the influence of the mediæval Jewish philosophers, which infects both Mr. McKeon and (as is well known) Mr. Roth: though a great deal of work has been done on this subject, it has led to very little result in the interpretation of Spinoza, though it might be much more productive in the hands of a writer not merely learned in the letter of Spinozism, but inspired by its spirit, and thus reading the system intuitively rather than rationally (to use Spinoza's own distinction), and allowing its incoherencies to take their own measure in the light of the whole. It is too often forgotten that the *Ethics* falls under the second kind of knowledge, *Ratio*. That there was a great deal in the teaching of Spinoza not to be found in Jewish philosophy is testified by his excommunication (which modern Jews, anxious to honour a member of their race, are apt to forget), but this no more proves that he was uninfluenced by Crescas, Gersonides, ben Maimon, and the rest, than the opposition of the Cartesians demonstrates that the writings of Descartes were nugatory. It is not to such changes of emphasis that we must look for a better understanding of Spinoza: there is probably no important doctrine enunciated by him that has not been traced to some source in earlier schools; what has not been traced is the philosophy of Spinoza as a unique whole, and it is to this that study should be directed. Mr. McKeon's subtitle indicates that he is, in a manner, conscious of this requirement, and if Mr. Roth, as a scholar rather than a philosopher, is perhaps a little too interested in displaying his knowledge of the small details of modern research, he does his best to correct the balance by very liberal quotations of the translated words of Spinoza himself.

Mr. McKeon divides his treatment into two parts: first, the beginnings of Spinoza's thought, occupying four chapters in which he considers its background, the first inchoation in the *Short Treatise*, its relations with Cartesianism, and, lastly, with experimental science. These chapters assemble a good deal of interesting matter about the problems and types of solution that had been offered by Spinoza's predecessors and contemporaries, and by Spinoza himself (if the *Short Treatise* was written by him —an assumption accepted by Mr. McKeon and only slightly doubted (pp. 28-29, 31), by Mr. Roth), and in spite of some dark passages (*e.g.*, on pp. 106, 111, 155) are well worth reading as an introduction to the substantial part of the work. This second part bears the title: *The System of Spinoza's Thought*, and is divided into six chapters dealing with: God and the Universe; Knowledge; the Passions; Reason, Religion, and the State; the Intellect; and finally the Unity of Spinoza's Thought. Unfortunately, while these chapters very naturally contain a good deal of important matter, they constitute the weaker part of the book. The unity so emphasised by Mr. McKeon is discovered in the agreement of the features derived from various treatises and sections with one another, rather than in the single intuition of Reality as a unique whole, which is the outstanding character of Spinozism. No indication is forthcoming that the writer has been able to place himself at the very standpoint of Spinoza, and so to grasp his conception of the whole. Spinozism is for him a body of doctrines rather than a philosophy. One result of

this is that Mr. McKeon is at times led to express himself in terms which are offensive to an ear tuned to the language of Spinoza himself: the Attributes *interpose between* Substance and the universe (p. 161); "the idea of a circle is the same thing as the circle with this difference, that *it can be known*" (p. 205); "Ideas which people have of Peter may or may not be true; if the idea is true it will contain ideally (*objective*) all that *the idea* of Peter has in it formally" (*loc. cit.*); "For the mind to have an idea is for it to penetrate significantly the nature of reality, not therefore to discover things which actually exist, but rather to encounter the formal constitution of things and adumbrate a rationality" (pp. 205-206); "the mind can know only the modifications it perceives *in itself* and the interrelations of rational forms in which it finds itself implicated" (p. 206); "The mind has true ideas because of what it is and not because of what it *experiences*" (*loc. cit.*). These passages are mainly taken from the chapter on *Human Knowledge* (the italics being supplied) which is especially rich in examples of the failing to which we have referred; indeed, the greater part of it seems hopelessly confused so that it is likely to be the source, either of fundamental error in the reader, or at least of acute mental distress. We may add that the account given of Reason and Intuition (pp. 218 *et seq.*) seems quite wrong and it is followed up by remarks to which no precise significance seems to belong. It is fair to say that this chapter is the least satisfactory part of the whole book, though the assertion of chap. v. that "Spinoza expounds a doctrine of immortality" (the reference is to *Part V.* of the *Ethics*) would be difficult to beat. Spinoza's own clear statements to the contrary appear to be understood by Mr. McKeon as applying only to the duration of memory and imagination; and since he says nothing more of the eternity of the understanding, we are left to suppose that he thinks of the eternal essences as immortal. If this is not his view it is a pity that he did not think it worth while to discuss more fully what is certainly the central and fundamental doctrine of Spinoza, and the ultimate source of "the unity of his thought".

Mr. Roth's book is divided into three main parts: *Book I.* dealing in three chapters with the life, works, and general outlook; *Book II.* consisting of four chapters on the Spinozistic philosophy itself; and *Book III.* dealing with Spinoza's place in history. The third book is undoubtedly the best written and most interesting part of the volume, and Mr. Roth's well-informed and scholarly mind is there seen at its best. In *Book I.* the usual line is followed and we need make no special comment upon it, except perhaps to regret that the writer has followed his predecessors too closely in overemphasising the ethical and political character of Spinoza's intention and interest. "The subject nearest to his heart was not the nature of Substance, but the nature of man" (p. 51); on the contrary it would be truer to say that his ethics and politics are only inferences from his metaphysical doctrine, and thus, though they are the final result, they are not the final cause of the whole. Very naturally, as a man, he found the application of truth to man's condition of great interest and importance; but metaphysics was surely his real *métier* and "nearest to his heart".

Book II. is really composed of quotations from Spinoza's treatises and letters, strung together with a running commentary, and Mr. Roth might have produced a volume even more valuable than this, with the same matter (if the needs of the *Leaders of Philosophy Series*, to which the book belongs, had permitted it) by making it a volume of selections carefully arranged with commentary and a general introduction containing the matter of *Books I.* and *III.* The method of extensive quotation has

clearly been adopted on principle: the book "is intended as a help to, not as a substitute for, the reading of Spinoza" (p. xi.), and we are glad that the author has "revised and in part re-written" the translations quoted. In this matter, as also in the style of his comments on the text of Spinoza, Mr. Roth's book compares more than favourably with that of Mr. McKeon; the comments of the latter are frequently much more obscure than the original which is being explained, whereas Mr. Roth's explanations do clarify the doctrine as far as they go, and present it in a form suitable to the beginner or amateur; that the result is a certain superficiality is to be expected, but it cannot be said that Mr. McKeon's obscurity conceals any striking profundity of interpretation: it is mainly a defect of style.

No reader will expect such books as these to advance the study of Spinoza other than distributively: no solutions of ultimate difficulties are to be sought in them, but they give accounts of the view of Spinoza's philosophy commonly accepted by "general practitioners," varied by selected "specialist" modifications, and by the writers' particular predilections. Both authors provide useful bibliographies and indexes. For some unexplained reason Mr. McKeon reproduces a portrait of Spinoza which originally appeared in Christian Wolf's *B. v. S. Sittenlehre* (1744), and which is obviously a poor reproduction of the portrait of the *Opera Posthuma*, which again is an unsuccessful copy of the Wolfenbüttel oil-painting. The printing of Mr. Roth's book is much better than that of the American work: the latter has, among many slight errors, two serious *lacunæ:* one on pp. 99-100, which has not been resolved, though the first line of p. 100 is taken, without compensation, from the middle of p. 101; and the other on p. 192, which is corrected by reading the lines in the following order: 32, 36, 34, 35, 33. The abbreviation of *Tractatus de Intellectus Emendatione* troubles Mr. Roth, who goes one worse than Mr. Joachim's *TdIe*, and gives us *D.I.E.* *P.Ph.C.* again is hardly a satisfactory abbreviation of *Renati des Cartes Principiorum Philosophiæ, Pars I et II.* Mr. McKeon, content with less brevity, is more lucid in his references.

H. F. HALLETT.

A Sceptical Examination of Contemporary British Philosophy. By ADRIAN COATES, M.A. London: Brentano's, 1929. Pp. 256. 10s. 6d.

MR. COATES has written a criticism of the philosophical views of ten of the contributors to *Contemporary British Philosophy, Second Series,* devoting to each author one of the ten chapters of this work, and whatever faults a dissatisfied critic in a cool hour may find in his book, I cannot imagine that anyone would say he had not enjoyed reading it. He combines an infectious earnestness with a disarming sense of humour, and I can only express my admiration for the clarity of his style, the frankness of his judgments, and the acuteness of his criticisms. And his criticism is not captious, but generally goes to the root of the matter; his first and sixth chapters for instance, seem, to me at least, models of economical demolition.

Mr. Coates tells us with his usual candour that he was induced to write his book in the form of a "parasitic commentary" partly by the consideration that this would enable him to "present his views polemically". He is at his best in attack, and he is usually attacking, but he insists that

he does not regard polemic as an end, and he develops in opposition to the objects of his criticism a philosophical doctrine of his own, based partly on the contributions to *Contemporary British Philosophy* of James Ward and Prof. Moore, which are examined sympathetically in chaps. viii. and x.

The constructive portions of the work seem to me far less good. In reviewing Mr. Coates' philosophical doctrine, I could wish myself a double portion of Mr. Coates' spirit. We must still admire the plainness of his speech and the candour of his presentation, but I do not believe that his book contains a *positive* contribution of any value to the common stock of philosophy.

Mr. Coates calls his position "Common-Sense Pluralism," and the writer of the advertisement on the "jacket" describes it with perfect correctness as lying "half-way between Realism and Idealism". I believe that this half-way position can be shown to be equally untenable in Mr. Coates' ethical and metaphysical doctrines and in his Theory of Knowledge, but limitations of space compel me to confine myself to the last.

Mr. Coates starts by asking what is implied by the *fact* of cognitive experience and he follows Ward in arguing that this primary datum involves the existence not merely of a percipient subject, but of a perceived object. From "cogito" we must infer not merely "sum" but also "aliud est," and thus the foundations of Realism are securely laid by the fact that thought itself demands an Other independent of thought. And yet to go on to say that the object in itself and apart from perception possesses those *qualities* which it possesses as perceived, and that the correctness of a perception consists in its correspondence to an unperceived norm—this Mr. Coates perceives to be nonsense (*v.* p. 227). The qualities of a perceived object cannot exist in an unperceived object, *they* cannot be independent of perception, and if we ask for a criterion of their reality, this must lie in their correspondence, not to anything beyond perception, but to the perception of a normal person in normal conditions. Thus Mr. Coates distinguishes the "that" of the object from its "what"; he regards the "that" as entirely independent of being perceived, the "what" as entirely dependent on it. "Things are real in the sense that their 'being' or 'existence' is independent of our perception of them" (p. 224), but "while the (subject-object) relation postulates the world of independent objects, it postulates at the same time that 'the nature of things' *is* our system of knowledge of them" (p. 232). And "although *sum* involves the fact of an independent *aliud*, yet the quiddity or content of that *aliud* is not independent, but conditioned by the nature of our perceiving" (p. 252).

This is the essence of Mr. Coates' 'half-way' position, and I think it is clear that it rests upon a mistake. Briefly the difficulty is this: the least that will satisfy Mr. Coates' "Realist" conscience is independent existence of the "aliud," but the independence inferrible upon his own principles from the fact of perception can never amount to independent *existence*. We are told that the "that" of the "aliud" is independent, but not its "what". But a "that" cannot exist without a "what"; nothing can be, without being something. Thus the "aliud" on Mr. Coates' own premises must enter into perception in order to acquire a "what" and therefore in order to exist. This may seem a queer sort of 'independence' of the object, but this argument can justify no inference to independence in any other sense. But Mr. Coates' "Realist" conclusion demands 'independence' in a vastly different sense, and it is needless to say that he reaches it by mere equivocation in the use of the word. Thus he speaks

in the passages quoted above of the independent existence of "things" and of a "world of objects". But "things" and a "world of objects" are no mere "that". They have covertly been given a "what," which is then assumed, in defiance of all Mr. Coates' principles, to belong to them independently of perception.

I venture to suggest that, if Mr. Coates really did set out to find a position intermediate between "Realism" and "Idealism" he was embarking on a necessarily hopeless quest; it would be as profitable to look for a position half-way between Realism and Nominalism or between the terms of any other out-worn antithesis. "Realism" and "Idealism," as Mr. Coates uses these terms, are certainly both false, but just as certainly they cannot be conceived as extremes between which the truth lies, and it is surely time that philosophical speculation should quit once for all its barren oscillation between these two poles and set itself instead to realise the implications of the great discovery which both rendered the antithesis futile and provided a means of escape from it; I mean the discovery, first made in the eighteenth century, that human institutions (including not merely social institutions, but such things as a language or a science) can be made the objects of autonomous sciences; in other words, that such institutions can be shown to follow intelligible laws of development, *which are yet irreducible to the laws of individual conduct.* This surely is the common presupposition of the sciences, *e.g.*, of Economics and Philology (of all the "Geisteswissenschaften"), and of every kind of history.

In face of the existence of these sciences it seems a mere futile dogmatism to continue to assert that the individual percipient (or agent) is the ultimate form of spirit. And yet it is precisely upon this assumption that the very existence of the "Problem of Perception" and the classical antithesis of Realism and Idealism rests.

In more than one passage Mr. Coates seems on the point of breaking loose from this dogma, but he draws back on each occasion before the logical corollary of his own arguments. Thus (pp. 204 ff.) he brings against an atomic materialism arguments which are certainly valid, but which are no less valid against an atomic individualism. It is the existence of the sciences of organic nature (argues Mr. Coates) which forbids us to regard the molecule or the atom as the ultimate reality, by introducing us to a sphere (that of living beings), which is "integrated above the molecular plane"; *i.e.*, in which observed behaviour can no longer be explained as a mechanical "composition" of the motions of individual atoms, but only by the laws of a supra-molecular (or organic) unit. Well and good. But, by an identical reasoning, it is the existence of the sciences of 'objective spirit' (the "Geisteswissenschaften") which forbids us to regard the individual soul as the ultimate reality, by introducing us to a sphere in which observed development cannot be made intelligible by any appeal to individual psychology, but only by appeal to the underivative laws of a spiritual reality which is 'supra-individual,' or 'integrated above the individual plane'. Mr. Coates insists somewhere that philosophy must be based on science. Exactly: but why in the name of all that is logical exclude precisely those sciences which are the peculiar glory of the modern era?

MICHAEL B. FOSTER.

Modern Materialism and Emergent Evolution. By WILLIAM MCDOUGALL. London: Methuen & Co., 1929. Pp. xi, 295. 7s. 6d.

THIS book is the permanent form of the W. G. Duncan Lectures delivered in the Louisville Presbyterian Theological Seminary in November, 1928. In his Preface Prof. McDougall explains that he now realises that the greatly neglected problem of teleological causation is prior to that of design in nature, and that his present argument should be taken as supplementing his *Body and Mind.* The book contains six chapters and an Appendix of fourteen 'Notes,' some of considerable length; and as it is also equipped with an index, and an abstract of the argument accompanies each chapter, Prof. McDougall may be said to have done all he could to smooth the path of his reader.

The book is a thorough-going and fearless attack on most of the hoary abstractions upon which the mechanistic view of the world is based. Prof. McDougall calls this doctrine 'Modern Materialism,' and traces it to a denial of teleological causation and of the efficacy of intelligence and purpose; he counters it by contending that "mental activity is what it appears to be and what it has always been held to be by common sense, namely, an effective agency in the determination of the course of natural events, a designing and creative agency, capable in some degree of shaping the course of things in accordance with its desires, its purposes, its ideals" (p. 33). Intelligent action, he finds, "is purposive, and all purposive action is more or less intelligent" (p. 44). "Intelligence is the power of adapting action to novel circumstances," and its three criteria are recognised as infinite adaptability, persistence, and cessation when its goal or end is reached (pp. 66-68). These are all objective, but Prof. McDougall sees no reason for not adding, as a directly apprehended subjective mark of purposive action, "the unique, the altogether peculiar experience of activity" (p. 69). For "there is only one form of teleological causation with which we are directly acquainted, namely, our own purposive activity" (p. 43). He inclines, however, to treat teleological causation as different in kind from mechanical, though he admits that "all causation may be shown to be of one order only" (p. 64 n.); but it is "at least as reasonable to suppose that all mechanistic process is teleology in disguise as that all teleological causation is disguised mechanism" (p. 73).

Having thus decided to scrap this fundamental assumption of mechanism, Prof. McDougall is naturally led to affirm a number of consequential 'heresies.' Thus he upholds Lamarckianism, on the strength of "a large and constantly increasing mass of more or less direct evidence" (pp. 153-154), as "a well-based theory" which "assigns to Mind a leading role in the drama of organic evolution" (p. 154), and as "good evidence of the reality of that immaterial organisation which is indicated by all impartial consideration of the facts of memory, the facts of the unity of consciousness, the facts of integration and disintegration of personality, the facts of intelligent purposive activity" (p. 155). He unreservedly proclaims his adhesion to the pragmatic conception of science (p. 28 n.) and truth, declaring that "all our intellectual apparatus and activities, the processes of perception, imagination, remembering, judgment, reasoning and so forth, are all alike, steps towards action, incidents, or events within a train of purposive activity that tends to issue in action. We think, perceive, remember, judge or reason for the sake of action" (pp. 39-40; *cf.* also pp. 57, 83, 188). He jettisons determinism as incompatible with teleological causation (p. 283 n.), being emboldened to do so by H. V. Knox's

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The first reflection that occurs to the reader of Prof. McDougall's book is that it must be a long time since any psychologist of the first rank has ventured to be anything like so outspoken; the second, that it requires a great deal of courage to question mechanism and determinism in psychology. Indeed, it probably demands the same sort and amount of courage in a psychologist to do this as to allude to psychology in a logician. When we observe further that the heretical programme both in psychology and in logic would have the effect of bringing these sciences together and of reconciling them to common sense, and that in both cases the heresies advanced claim to yield a better interpretation of the facts and are urged in the interests of the science itself, it seems obvious that the heretics should combine and join forces in their attack upon the orthodox tradition. As a first contribution to this *rapprochement* I should like to point out to Prof. McDougall that for my voluntaristic 'psychologic' determinism is not only not a necessity of thought, but is repudiated implicitly in every real act of thought. For if every object of thought is a product of *selection*, if every truth claims to be the *best* belief to be entertained about a matter, and if every judgment implies a choice among logical *alternatives*, it is clear that a certain measure of indetermination is implied in the very possibility of thinking. I am delighted therefore to welcome the psychological development of which Prof. McDougall has made himself the leader.

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F. C. S. SCHILLER.

L'Année Psychologique. Vingt-huitième Année. Publiée par H. PIÉRON. Paris: Librairie Félix Alcan. Pp. xv + 866. 110 fr.

THIS number of *L'Année* is issued in two parts, but the paging is continuous. As usual, it consists of original memoirs, 'notes,' and a bibliography.

The bibliography, which itself extends to some 630 pages, is as before analytical and critical, and remains indispensable as an aid to the research worker in present-day psychology. It combines the characteristics of the *Psychological Index* and *Psychological Abstracts*, and while it is less complete than the former, the fact that it is critical as well as analytical gives it a value all its own.

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its intensity, the duration of auditory excitability as related to vibration frequency, and the persistence of auditory sensations. Some preliminary results of this investigation were published some years ago in a previous number. It was then shown that a single complete vibration was sufficient to give tonality to a sound. Kucharski has now established the relationship between time of action, stimulus intensity, and vibration frequency, and has obtained further data with respect to the effect on the sensation of regular interruption of the stimulus. There is striking agreement in the results obtained with those obtained by Piéron in the study of visual sensation. Kucharski holds that his results are inconsistent with the validity of the Helmholtz resonance theory, which must accordingly be modified or abandoned. As yet, however, he is not prepared to formulate a theory to take its place.

The second memoir—*La perception des longueurs par la peau*—by M. Foucault, is an attempt to analyse our perception of length on the cutaneous surface by means of an experiment—or rather series of experiments—in which the subjects are asked to reproduce the length of an edge of cardboard stimulating one of the three phalanges of the middle finger, on the palmar and dorsal surfaces, without and with movement. The reproduction was visual, and was made by cutting off an equal distance along a line drawn on paper. It must be confessed that the experimental method seems somewhat crude. However that may be, Foucault's main conclusion is that the length is estimated by comparison with the length of the phalange stimulated, and that this fact explains the deviations from Weber's Law which are apparent.

In a memoir, *Excitation lumineuse intermittente ou alternante*, H. Piéron continues the important work which he has been carrying on for several years in the field of vision. In the present memoir four problems are discussed on the basis of experimental investigation. The first problem is that presented by the phenomena of increased luminosity with intermittent light. It is well known that the intensity of the visual sensation from intermittent light increases with the frequency of the interruptions until it reaches a maximum, after which it decreases to a condition of stability, when it becomes independent of the frequency of the interruptions and sensibly equal to the luminosity of a continuous light stimulus of its mean intensity. Piéron describes a method by which the maximum luminosity can be determined for the human being with interruptions of a frequency above the point of fusion. The second problem is the relation of suprafusional interruptions to the Talbot-Plateau Law after stability is attained. The third problem is that of the factors regulating the duration of the interruptions, the fourth that of the relation between intermittence and alternation of stimulus. Piéron finds in the last case that the phenomena are quite distinct, and must be studied separately. The whole memoir, however, must be regarded as a preliminary rather than a final report.

In a memoir, *Les images consécutives et leur pouvoir hallucinogène*, Quercy makes a further contribution to his study of hallucinations. After describing the various phenomena of the after-image the author points out that the observation of the after-image favours the development of a hypnagogic state, and in this state after-images may be the starting-points of numerous hallucinations resembling those evoked in a state of fever.

St. Velinsky in the fifth memoir—*La certitude associative et la psychologie de l'apprentissage*—begins by criticising the concept of 'force' or 'strength' of association, and would substitute that of 'associative certitude'. The

remainder of the memoir is an interesting discussion of the factors in learning, with emphasis on the significance of associative certitude. He also suggests a method by which associative certitude may be measured.

In the sixth memoir—*Température interne et appréciation des durées*—M. François describes an experimental investigation of the variation of the body temperature with variation of the time sense, and suggests that a new theory of our apprehension of the lapse of time must be developed in the light of the facts his investigation has disclosed. The variations of body temperature in the experiments were produced by diathermic currents with an e.m.f. of about 40,000 volts and a frequency of alternation of more than a million per second.

The final memoir by A. Fessard is statistical—*Précision et cohérence dans les examens par tests.* The discussion is of a kind very familiar in our English and American psychological literature, but not so common in French. The various formulæ employed in the statistical analysis of psychological data are considered, with a view mainly to the practical employment of tests rather than the theoretical inferences to be drawn from their results.

An unusually wide experimental field is thus represented in the work as a whole. In addition, there are three 'notes,' the first on the "Subjective Factor in Examination Marks," the second on the "Psychological Factor in the Construction of Typewriters," and the third on the "Binet-Simon Tests and Modern Technique".

JAMES DREVER.

Essai sur L'Objet Religieux. Par CHARLES HAUTER. Paris: Librairie Félix Alcan, 1928. Pp. 281. Price 35 fr.

M. Hauter has written an excellent book, full of freshly-put knowledge as well as of luminous suggestion. It is a detached and what is called a phenomenological study of the religious object; and it was hardly necessary for M. Hauter to warn us, near the close, that he has not put his analysis forward as a critical argument which should demonstrate the exclusive truth of this or that religious system. Still less does he profess to have discovered the law of religious evolution or the goal to which such evolution, if it exists, must tend. We are then to put aside the preoccupations of epistemology, psychology, sociology, or history; we are to abstract from the subjective side of religion, and to envisage solely that to which the religious experient actually directs his attention—whether this "object" be, from the ultimate point of view, real or unreal.

On page 166 Hauter signalises a distinction which it is well to bear in mind, between "the exciting object" and "the religious object" proper. They constitute, he says, two stages in an evolution and bear successively on the same datum. The datum is first excitative, thereafter it may rise to the religious dignity of a full object bearing a divine name. The interval of time between the two stages may be very short, but also it may be lengthened by difficulties felt as to the full divinisation of the object.

The book falls into three parts. Part I. treats of the constitution of the object; and here are discussed such topics as the formation of the concept of a religious substance, distinct from ordinary matter; the idea of the holy; the irrelevance for the religious sentiment of unknown divinity; power as an essential characteristic of the object; the barren generality of fatalism as contrasted with the unique event and experience out of which

a religion springs; and the fact that the religious object makes itself consubstantial with man, in more physical or more spiritual ways. Hauter urges with point that Schleiermacher's idea of absolute dependence is relative not so much to deity as to destiny or the universe, with "fate" as its mythological schema. But I think that in his criticism of Otto, *à propos* of the concept of "the holy," he overlooks the fact that by the holy Otto means not merely what is tabu, but a combination or fusion of the "uncanny" with rational and ethical factors.

In the second Part a careful account is given of religious systems revolving round natural objects. The criticism offered here of Durkheim's view that religion is the cult of society has merit of a high kind. Hauter points out that social exaltation may arise from many causes, not all religious, and he justly argues that Durkheim fails to explain either the variety of religions or their creative force. We are once more reminded that the religious experience is, *in sensu eminenti*, an experience of power. Possibly the writer scarcely goes far enough in stating that the natural object prepares the way for ethical and spiritual religion; does not the tabu-mana system itself contain, however vaguely and crudely, the idea that duty is unconditionally valid? There are exceptionally interesting pages in this Part on Natural Religion as found in Plato and Spinoza. Plato's great service lay in his successful endeavour to ally the principal factors in natural religion with the best tendencies of Greek rationalism; also, by his transformation of a notion which was primarily logical into a religious notion, he took a step beyond Socrates. But it is in Spinoza we find the most perfect instance of Natural Religion, for there the religious object is Nature itself as a whole. Yet Spinoza's religion does not stop at the pure contemplation of the cosmos; there are in him two forms of piety, for he gives a place also to inherited ethical piety, as we may see most clearly in the *Tractatus theologico-politicus*. Goethe's religious attitude to the sun, so amazingly earnest, shows, we are told, how a religion is born and how a cult originates. Inevitable crisis for the religious object on this natural plane arrives when it becomes ever more clear that no correspondence is really possible between religious life and the theoretic idea of the cosmos. In the last analysis, natural religion on its theological side turns out to have no religious object at all. A purely general object is the equivalent, for piety, of none.

The freshness and verve of these pages on Plato, Spinoza, and Goethe must recommend them to a wide circle. They contain what has struck the present reviewer as the most original matter in the book.

Part III. studies the object in ethical religion. Here some of the most significant data naturally are found in the Hebrew prophets, in whose experience we see the ethical religious object imposing itself by a kind of superhuman power, which it is vain to resist. Kant figures here as a descendant of Socrates and the prophets; he transforms the object of Christian tradition as the prophets had done the old conception of Jahweh, teaching really that every serious moral act is *ipso facto* the act of a believer. The simple fact of duty now becomes the exciting object and, passing beyond itself, unfolds in the direction of the religious object proper. It acquires, for Kant, that access of reality which gives it a religious import. This transcendent reference, on the other hand, Forberg cuts out, while retaining the other elements of Kant's view, and thus may be taken as the best representative of a purely and exclusively ethical faith. But crisis arrives here also. It arrives when a purely ethical faith has to face modern scientific ideas of what constitutes proof; it then inclines to

crumble into different types of ethical faith, leading up, at least in practice, to a veritable polytheism, such as humanity has never before seen. This last statement points, apparently, to the tendency to deify men like Lenin and Mussolini. At a still further point the religious hero emerges: and especially as creative (in distinction from conservative) he easily becomes a religious object. Christianity, Hauter affirms, is the type of religion with a heroic object; and in the pages that follow there is much said about the theological work of Herrmann that is well worth consideration, little as Herrmann would have admitted the eventual relevance to his construction of Hauter's "heroic" category. A section of unusual interest is given to four current ways of conceiving Jesus as religious object, and of the modes, sometimes superficial and all but convulsive, in which an effort is being made to conserve Christian piety in a day of vast collective upheaval.

The book well repays study. It is successful in presenting a great mass of facts, not all of them unfamiliar, in a fresh and rewarding light. On page 259, by the way, the meaning of the theological phrase "immaculate conception" is misunderstood.

H. R. MACKINTOSH.

Feelings and Emotions. By THIRTY-FOUR PSYCHOLOGISTS. The Wittenberg Symposium, edited by MARTIN L. REYMERT. Worcester, Mass.: Clark University Press, 1928. Pp. xvi + 454. $6.

It was a happy idea of Reymert to plan, for the opening of the new psychological laboratory in Wittenberg in 1927, "a mobilisation of international scholastic talent in the interest of clarifying the psychology of feelings and emotions" (p. vii). The result is a symposium of thirty-four papers and five addresses which no psychologist can afford to miss. Twenty-one of the papers deal with problems in the analysis and investigation of emotion and feeling. Of the others, twelve deal with emotion and feeling in relation to physiology, pathology, psychoanalysis, child-psychology and religion, and one attempts to summarise the historical development of the theory of emotion. All the papers, with the exception of one or two of the least valuable, are short and to the point; the discussion on each paper is fully—perhaps too fully—reported; and the book is satisfactorily printed, though appallingly bound.

Great Britain is well represented by Spearman and Aveling, whose papers follow an appropriate introductory paper by Madison Bentley and an excellent survey of the place of emotion in modern psychology by Jastrow. Spearman, declaring that "exact investigation is wanted, both of the manner in which the inclinations and emotions are influenced by circumstances and also of the way and degree that they themselves influence conduct" (p. 41), suggests some "new aids to research". Aveling too discusses the investigation of feeling and emotion, paying special attention to ways in which introspection and experiment may be profitably combined. Of the other symposiasts who also deal with more general problems only four can be mentioned here. Claparède, though he adopts a modified form of the James-Lange theory, argues that "feeling has, for conduct, a functional value analogous to that of meaning (concept): it is an instrument of adjustment" (p. 139). McDougall, founding himself on his hormic theory, presents again the thesis that all feelings "arise from, and are conditioned by, the degrees of success and failure of our strivings" (pp. 202-203). Knight Dunlap, intriguing as always, discusses "Emotion

as a Dynamic Background". Woodworth, who asks how emotions are identified and classified, reaches, it is interesting to note, a conclusion very like that of Stout and Mace in the new *Encyclopædia Britannica*. Both he and they believe that emotions can be distinguished from each other only by differences in their conative ingredients—that there is no difference between the feeling-tone of one emotion and that of another.

The three papers on the physiology of feeling and emotion are all good. In his treatment of the neural organisation for emotional expression, Cannon exhibits once more his great ability in this field. Piéron, at his usual high level, deals with experiments on emotion in animals and men. Bekhterev, who has thrown so much light on conditioned reflexes, discusses the somato-mimetic reflexes underlying emotion. The papers on the pathological and psychoanalytic aspects of emotion and feeling are from Janet, Jörgensen and Adler; the absence of Freud and his followers is a loss. Emotion and feeling in children are discussed by Stern and Katz, and their relation to æsthetics and religion by Langfeld, Gruehn and Jaensch. Brett's short history of the theory of emotion begins well but ends with emphasis on an insignificant Norwegian experiment.

REX KNIGHT.

Les Problèmes de l'Induction. By MAURICE DOROLLE. Preface by PROF. LALANDE. Paris: Alcan, 1926. Pp. xii, 147. Fr. 12.

M. Dorolle is a professeur agrégé at the Lycée Condorcet in Paris. His book is certainly a useful means of supplementing deficiencies of the 'inductive' chapters in elementary logic text-books. Well aware of the confusions that commonly centre in the use of the term, he spends some pains in showing first of all what induction is not. The book contains three chapters: the last and briefest, dealing with philosophical foundations, is the least thorough. In the first chapter the author indicates the logical character, and several forms, of Generalisation. The second, on "Empirical Determination," is more positive and perhaps the best.

Induction cannot be defined by opposition with Deduction. Nor is it simply a search for causes, as Mill supposed, nor simply an affirmation about every member of a class of what has been observed to be true of some. Again, it is not a clearly marked off process of reasoning, though it includes pieces of interpretative argument at certain stages. Induction is rather a totality of heterogeneous processes, whose characteristics cannot profitably be resumed under one formula, but are best seized by examining specimens. They are, however, operations by which we pass from perception of empirical data to an affirmation of laws. Laws are first of all regarded as expressions of regularity or frequency among phenomena, but, on analysis, they are also found to exhibit the constitutive relations or elemental mechanisms of their phenomena. The discussion throughout these two chapters is clear and well illustrated, and the references to Hamelin's famous article *Induction*, and to Darbon's *précisions* of it (perhaps insufficiently known in this country) add to the value of the book. M. Dorolle can hardly be said to contribute anything new to outstanding difficulties, but his presentation of the character of inductive and experimental inquiry is fresh and informative, and succeeds in setting aside unduly simplified views about it.

S. V. KEELING.

Introduction to Indian Philosophy. By JWALA PRASAD, M.A., with a foreword by R. D. RANADE, M.A. Allahabad: The Indian Press, Ltd., 1928. Pp. viii, 196. 4s.

This work, as Prof. Ranade in his foreword points out, is primarily intended for the B.A. students of Indian universities. It undoubtedly fills a gap, and will be useful, not only for its special purpose, but for anyone who wishes to have an outline of the main achievements of Indian thought, or who aims at getting an insight into the characteristic terms and conceptions in which the systems became expressed. No apology is needed for the use of technical terms. The explanation and discussion of these is one of the best means of getting rid of the preconceptions with which the English reader inevitably starts. Hence the very useful glossary of important terms might be enlarged with advantage, but it is doubtful if such names as Buddha, Patanjali, Jainism, can be called technical terms, and the information about them in the glossary merely duplicates the accounts given in the text.

As the work is primarily intended for young students, it might be advisable in the next edition to give some help to the reader who wishes to pursue his studies further. A long bibliography, chiefly of works in English (good, bad, and antiquated), is given, but what the student most wants is some indication of what he should read next. He might spend pounds in groping among this literature without getting a step further. Quite a number of short compendia exist, which give a clear outline of the most important systems, and of which the study would help to smooth the initial difficulties in approaching the great commentaries. Some of them are mentioned in the bibliography, and if they were indicated this part of the book might be made into a most useful section.

The author concludes with a review of the present outlook in Indian philosophy. He looks for a new era of Indian thought, and hopes that it may be freed from the traditionalism which tends to impede further development, and yet that without neglecting its ancient inheritance it may make a contribution to the general philosophical development of the time. His own clear and unbiased treatment of the subject is of good augury.

E. J. THOMAS.

The History of Psychology. By W. B. PILLSBURY, PH.D. New York: W. W. Norton & Co., Incorporated, 1929. Pp. 326. Price $3.50.

This history, though it begins with "early theories of the soul," like those of the Egyptians, and ends with "the so-called Understanding School of psychology, represented by Spranger, Binswanger and Ewald" is nevertheless quite short. It is merely an outline or sketch of the history of psychology, and it will satisfy only those who are easily satisfied. The publishers—who, by the way, have had the book agreeably printed—may be right in saying that it is "the first popular history of psychology," and that it moves "from Aristotle to Freud and Watson". They are certainly wrong in supposing that it will "clarify the knowledge and absorb the interest of psychologists".

Mr. Pillsbury's treatment of more modern British psychology is especially brief. He finds nineteen pages enough for an account of the birth-places, careers and views of Spencer, Bain ("one of the few British psychologists

who held a university chair, and even he was a Scot," p. 193), Darwin, Galton, Ward, Stout, Sully, Rivers and Myers. Ward, "the first representative in England of the activist school" (p. 204), gets a page and a half. Stout gets thirteen lines. Spearman is not mentioned at all.

The treatment of *Gestalt* psychology is also a little strange. It does indeed occupy ten pages, and it does pay Koffka, Köhler and Wertheimer cautious compliments. But Mr. Pillsbury suggests, in a rather patronising way, that we really cannot allow these estimable people "to insist that *Gestalten* alone have any value for explanation, without saying what they are or how they act" (pp. 313-314). But by now Mr. Pillsbury has doubtless read Köhler's most recent and excellent book.

REX KNIGHT.

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F. C. S. Schiller, *Logic for Use : An Introduction to the Voluntarist Theory of Knowledge*, London, G. Bell & Sons, Ltd., 1929, pp. vii + 469, 16s.

H. Gomperz, *Über Sinn und Sinngebilde, Verstehen und Erklären*, Tübingen, J. C. B. Mohr, 1929, pp. viii + 256, M. 12.50.

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P. Choisnard, *Les précurseurs de l'Astrologie scientifique et la Tradition*, Paris, E. Leroux, 1929, pp. 71, 10 fr.

J. Needham, *The Sceptical Biologist*, London, Chatto & Windus, 1929, pp. 288, 7s. 6d.

J. Schultz, *Die Maschinentheorie des Lebens*, 2nd revised edition, Leipzig, F. Meiner, 1929, pp. viii + 194, M. 7.80.

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XUM

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VIII.—PHILOSOPHICAL PERIODICALS.

JOURNAL OF PHILOSOPHY. xxvi. 10. **A. Uchenko.** 'The Spans of Immediacy and Truth.' [Attempts to synthesize the 'relativist' demand that truth shall be immediately certain with its 'complex and discursive' character, and calls 'truth' the case "when all possible and relevant occurrences are revealed in one act of illumination." But the argument is obscured by failure to distinguish between psychological certainty and immediacy ('intuition') and logical certainty.] **D. S. Robinson.** 'Report of the Annual Meeting of the Western Division of the American Philosophical Association.' [At Cincinnati, Easter, 1929.] xxvi. 11. **A. E. Murphy.** 'The Anti-Copernican Revolution.' [By the 'Copernican Revolution' man was "read out of nature," and science has since been "the most authoritative body of doctrine to which the modern mind can appeal." Yet "its presuppositions are such that no fully critical mind can accept them," and it will not do to say "such methods, though 'really' false, are practically relevant." But it does not follow that the personalistic tendencies which may be called 'the new animism' are right. Eddington and Whitehead are then criticised in detail for jumping from the perception that physical laws alone are not enough to determine particular results to the conclusion that these are wholly arbitrary. Three conclusions are reached: (1) "The terms of physical analysis" though no longer exhaustive are still pervasive: (2) Though human experience is *not* to be excluded from nature, it *is* irrelevant to many physical processes: (3) It should not have been denied that "relative human perspectives are objectively real," but "it is also really and objectively relative." Hence "the defenders of an absolute God, freedom and immortality have nothing to gain from the contemporary philosophy of science".] **C. M. Perry.** 'Apropos of Essences.' [In Santayana, Drake and Strong. Refuses to recognise the identity-in-change *crux* and takes "change and identity, relations and terms" as *one* principle. This is offered as an irenicon.] xxvi. 12. **E. G. Spaulding.** 'Are there any Necessary Truths?' [Answers in the affirmative and even gives lists of them, 14 in all. The theory of truth which conducts to this conclusion is that "truth is disclosure" or better "where there is disclosure there is truth," and "there are no false propositions." And "there is at least one proposition" which is necessarily true, *viz.*, that "there *must be* either necessarily true propositions or not."] xxvi. 13. **F. P. Hoskyn.** 'The Problem of Motion.' [Concludes that "motion, like atomicity, is an absolute property, a change of relations that a physical system embodies apart from a selected frame."] **T. T. Lafferty.** 'The Theory of Perspectives as an Interpretation of Functional Analysis.' [Taking the theory of perspectives as a technique of analysis, we see that the discontinuity of perspectives arises simply from treating the *results* of analysis without regard to the *process*. It is then assumed that what are *already* objects of knowledge may be known, and that the act of knowing is an immediate relation between the mind and the

object: this omits the purpose or intention of the analysis, which is what really unifies the perspectives into an 'object.'] **M. W. Hess.** 'Kantor's Language Behaviour.' [Language is no doubt behaviour, but this obvious fact is not going to change the attitude towards language as symbolism.] xxvi. 14. **A. C. Benjamin.** 'Existence.' ['Particulars' and 'universals' being correlative terms, the form and content of a particular and the form and content of a universal are irreducible to one another. There is no such universal as 'particularity,' or as 'content of a particular,' or 'universality'. The being of particulars is 'existence,' and it is apprehended only by intuition. But existence cannot be the content of thought and all statements about existence are therefore absurd. Neither (*a*) the form, nor (*b*) the content, nor (*c*) the reference of thought to existence, can be the content of thought.] **C. A. Baylis.** 'Internality and Interdependence. [Neither the idealist doctrine that all relations are internal nor the realist assertion that some are external is right: the fact is that "any change in any character of any entity entails some changes in some (never all) of the other characters of that entity". This principle of "partial interdependence" does not however imply idealism.] **S. K. Langer.** 'The Treadmill of Systematic Doubt.' [Descartes's systematic doubt has "thrown our standards of knowledge into confusion" and turned our desire for intelligibility into a craving for absolute truth.] xxvi. 15. **H. C. Brown.** 'Contingency and Necessity in Nature.' [Philosophy should reconsider whether the concepts of contingency and necessity are applicable to the physical, for the sciences are beginning to suggest that "contingency is more basically real than necessity". Moreover, it should be recognised that necessity "as to the *mode* of occurrence" does not guarantee necessity "as to the *occasion* of occurrence". There is (1) Much more reason to believe that there are limits to the sorts of things which can happen than that particular events can be predicted. (2) Prediction and necessity are not bound up together, because statistical methods will warrant prediction even if contingency is real and no predictions are infallible. (3) It is an open question whether time should be conceived as a fourth dimension of space or as a creative principle. (4) The question of physical determinism or contingency is not to be confused with that of moral freedom, but is wholly independent.] **D. Drake.** 'Beyond Monism and Dualism.' [Replies to Kent in xxv. 23, denying that his doctrine is either dualism or thoroughgoing epistemological monism.] xxvi. 16. **G. H. Mead.** 'Bishop Berkeley and his Message.' [Address at a commemoration of the 200th anniversary of the Bishop's landing in America, at Berkeley, Calif. Emphasises that Berkeley dropped the Cartesian "dualism of mind and matter by abrogating matter". Newtonian physics could give no preferred position to man in its universe, but the growth of biology in the nineteenth century put into nature "the purposiveness of life and the intelligent attainment of the ends of living organisms". Now the scientist "imports more and more of that which was considered mental into his material world"; so he takes "over also the problem of relating the two to each other, and the philosopher can only wish him Godspeed in his undertaking".] **L. L. Bernard.** 'The Limits of the Social Sciences and their Determinants.' [Declares uncompromisingly that "there are no natural limits to the field of any science," but "the human mind selects a viewpoint for purposes of orientation". There are as many of these viewpoints or perspectives as there are problems and men to solve them. "A problem represents, in the last analysis, an obstruction to one's behaviour, physical or mental. The solution of the problem is a way out." The

only limits to any science are 'convention' and 'convenience'.] xxvi. 17. **C. W. Morris.** 'Has Russell Passed the Tortoise?' ["Whatever the final status of the mathematical concepts of continuity and infinity, Russell has not succeeded by their aid in passing the tortoise." He has only "passed the buck". He has "grossly exaggerated the philosophical importance of the Cantorian definitions of infinity and the continuum," confused "real motion with its conceptual analogue," and shirked the question whether mathematical postulates apply to the real. "Achilles is seen to pass the tortoise, and if our conceptual analysis does not agree with this, or if it requires a dubious use of the concept of infinity, something is wrong with the analysis and not with the occurrence."] **G. B. Phillips.** 'What does Art Express?' ["The one essential to be demanded of a work of art is that there be incorporated in it a worthy æsthetic form; the fact that the final appearance of this form may be preceded by a travail of the spirit, or an agony of delight as the artist feels himself slowly drawing nearer and nearer to his desired goal, is a secondary though still an important matter."] xxvi. 18. **E. Nagel.** 'Intuition, Consistency, and the Excluded Middle.' [Apropos of two German books on the philosophy of mathematics (Becker and Fraenkel), repudiates intuition and absolute guarantees, and discusses Brouwer's rejection of the actual infinite and the validity of the principle of excluded middle.] Contains also a long review of Whitehead's *Symbolism*. xxvi. 19. **W. T. Bush.** 'Memories and Faith.' [A charming sketch of the author's philosophic development and apostasy from 'the genteel tradition'.] **A. E. Avey.** 'The Law of Contradiction: its Logical Status.' [Defends it against Bogoslovsky, and declares that "ultimately the rigor of mathematics rests upon this Law of Contradiction. When it falls, there also falls the realm of mathematics, and when mathematics falls will fall the present scientific world": but makes no serious attempt to explain how it is compatible with change.] xxvi. 20. **H. C. Brown.** 'The Use and Abuse of Language.' ["It is often asserted that the communication of knowledge is only possible if words have fixed meanings," but actually all meanings are in a constant flux, especially in the sciences, because in them knowledge is progressive.] **F. J. E. Woodbridge.** 'The Promise of Pragmatism.' [Suggests that pragmatism has not fulfilled its promise because it has been treated as a starting-point for controversy about the nature of truth, and not as a method of clarifying ideas and determining what they mean. "Pragmatism may never arrive at truth, but it can minimise confusion;" and "when rocks become social, when clocks and rods behave remarkably, and when religion is encouraged by exploration of the nature of the atom," it is high time to *use* the pragmatic method.]

Revue Néo-Scolastique de Philosophie. xxxi^e Année. Deuxième série, No. 22, Mai, 1929. **J. Maréchal, S.J.** *Au seuil de la métaphysique: Abstraction ou intuition (cont.).* [A metaphysic of the platonist type presupposes, as the foundation of knowledge, an *intellectual* intuition in which matter, form, and actuality of the object are all given *a priori;* in fact it ascribes an "angelic" intelligence to man. What then is the function of sensible experience of the contingent in such a philosophy? It is held to provide a mere *occasion* for the intuition; but how does it co-operate in it? This is the insoluble difficulty for all thinkers of this type, Bonaventura, Descartes, Malebranche. Leibniz pushes the point of view to its logical consequences when he makes sensation itself wholly internal to the monad,

with the consequence that, against his own intentions, he abolishes real contingency as completely as Spinoza. A half-way stage between "intuitionism" and "abstraction" is afforded by Scotus, who holds that all that is needed to make the sensible intelligible is that it should be presented through sense, thus cutting out the further operation on it of the *intellectus agens*. This, for want of recognition of a genuine *materia prima*, must lead to something like pampsychism. A true Aristotelianism, like that of St. Thomas, admits neither innate ideas in the knower nor actual intelligibility in the primitive objects offered to our minds, but concedes to our *intelligence* a certain *non-representative a priori* quality. Kant's *a priori* is also non-representative, but what Kant does not see is that the same *a priori* which makes an object of experience actually intelligible, also enables us to arrive at some—at any rate—analogous positive determination of the Absolute.] **H. MacDonagh.** *La notion d'être dans la métaphysique de Jean Duns Scot* (*concl.*). [A long and careful examination of S.'s discussion of objections to his doctrine of the Univocity of Being. The fundamental difficulty is that Scotus maintains that Being is asserted univocally of God and of the creatures, yet it is not a *genus* common to both, because the distinction between the infinite being of God and the finite being of the creatures is an "intrinsic mode" prior to all categories and predicates. The source of this perplexing doctrine appears to be that Scotus never grasped the meaning of "analogy of proportionality". Hence he includes under univocity what is really "analogy of proportionality".] **P. de Munnynck.** *L'idée de l'Être*. [Whatever is apprehended is apprehended as *being*. But there is a hierarchy of orders of being, the conceivable, the conceived, the actually existent (the temporal, *devenir*), the super-existent (God). Actual existence adds nothing to the conceived, as Kant rightly maintained, but transports it into a new order of being. Being is not a genus of which the orders of the hierarchy are species, and hence is not an univocal term. The fundamental laws of identity, contradiction, excluded middle, causality, sufficient reason, are an explication of what is already contained in the notion of Being. Being is the common object of the understanding, and this means that it is a misconception to identify the understanding of a concept with knowing what an image symbolises. Much that has been written on the nature of "meaning" is only an imperfect attempt to escape from the crudities of the old Associationism. To understand is always to understand what something *is*. There are neither innate ideas, nor *a priori* categories; the only *a priori* is the intellect itself. Hence the universality and necessity of knowledge is based upon the presence of an element of the universal and necessary in the object known, and this element is the "idea of Being" itself. The absence of a clear notion of this idea of Being is the one great defect of Kant's marvellous *Critique*.] **A. Mansion.** *Bulletin d'histoire de la philosophie ancienne*. [Critical estimates by this excellent scholar of recent works of É. Bréhier, H. Meyer, E. Frank, Überweg-Praechter, G. Rodier, A. Raymond, E. J. Dijksterhuis, A. E. Taylor, A. Diès, J. Stenzel.] Reviews. Chronique.

Deuxième, série, No. 23 (Aug., 1929). **P. de. Munnynck.** *L'idée de l'être* (*cont.*). [The freedom of the will, rightly understood, is a direct consequence of the principle that the only object which can determine human understanding and volition is "Being unrestricted, that of which the contradictory would be Non-entity". Will is the "principle of those operations which follow by metaphysical necessity from the being of the object known *in intellectu*." Hence understanding and volition are

inseparable. All assent to a proposition is an act of will, though where there is complete "evidence" (as in the case of "2 + 2 = 4"), the volition is not free, but necessitated. It is by a necessitated volition that we inevitably will 'bonum in communi,' or will our own *bonheur* (as Kant always admitted). In the same way, in the order of practice, we necessarily will the 'either—or' of a contradiction. (We *must* will either to do this act or not to do it.) Free will cannot be defended by denying the methodological value of the postulate of complete determination in the natural sciences. [But what of the physicists' "principle of Indeterminacy"?] Nor is it enough to dwell on the emergence of the 'novel' in our acts, or to identify freedom with determination from within. (Kant rightly calls this *ein elender Behelf.*) Freedom is a causal relation between an act and its antecedents, involving a certain indetermination. In the order of action this indetermination is always to be found. I cannot avoid willing either to do this act or not to do it; but there is nothing in the antecedents, internal or external, to close either alternative, if the case is one of intelligent choice. For in such choice, the actualities as present in the understanding leave the will undetermined between the alternatives, just because both are recognised for what they are, genuine possibilities. Hence it is the volition itself which closes the indetermination, and there is no sense in asking for an ulterior "sufficient reason".] **F. Morelle.** *Les idées religiewses de Kant en* 1755-1760 (*concl.*). [In 1755 Kant still holds that revealed religion rests on incontestable foundations of historical fact. He apparently grounds his belief rather on the apologetics of the Wolffian school than on an appeal to 'religious experience'. He still believes in the reality of miracles and direct 'divine interpositions'. He regards Christianity as affording a reasonable explanation of the problem created by the actual moral condition of mankind. He still accepts the general ethical scheme of the intellectualist "enlightenment," though adding to it a highly austere ideal of morality and a pessimistic estimate of human nature. The doctrines of the Fall and the Redemption appeal to him as a reasonable explanation of the contrast between our high moral destiny and our degraded moral practice. The complete change of attitude towards revelation traceable in Kant after 1764 is presumably a consequence of the moral revolution produced in him by his study of Rousseau.] **J. Maréchal.** *Au seuil de la métaphysique: abstraction ou intuition?* (*concl.*). [According to the Thomist doctrine the process of "abstraction" has two moments: (*a*) the *intellectus agens* "illuminates" the phantasm and (*b*) by the aid of the now "illuminated" phantasm produces the *species impressa* in the *intellectus possibilis*. This species is now an *intelligibile* "in act". Thus the *intellectus agens* in a sense possesses the "first principles," though it has no innate ideas or "intuitions". The part of the phantasm is to give *specification* to the activity of the *intellectus*. This "assimilation" of the *intellectus possibilis* to the "intelligible" is not a mere passive reception; the intellect *tends* to apprehend its object, and it tends beyond it to its own adequate formal object, the "plenitude of being". The result of the process is a *verbum*, or judgment with objective reference. If we overlook the "dynamic" side of the whole process, a difficulty arises. The "transcendent," *i.e.*, objective reference of the judgment, cannot be explained as a formal, or an ontological, character of the *species impressa*. But if it is supposed to be added on to the contents, extracted from phantasms, which make up the quiddity of the species, by the *intellectus agens*, out of its own resources, this amounts to a doctrine of innate ideas, or intellectual intuition. M. holds that the difficulty is removed

by considering the 'dynamic' character of "assimilation". The moment the *species intelligibilis* is in contact with the *intellectus possibilis*, the latter seizes on it as its property and transcends it. *Cognitio* = "consciousness of the conformity established between the mind receiving the *species* and the 'thing,' or reality."] **A. Mansion.** *Bulletin d'histoire de la philosophie ancienne.* [Reviews of work on Plato by Burnet, Croisset, Robin, Diès, Taylor, Rivaud, Souilhé.] **L. Noël.** *Le cinquantième anniversaire de l'Encyclique* Aeterni Patris. **R. Kremer.** *Idéalisme et évolution d'après M. le Roy.* Reviews, etc.

KANT-STUDIEN. Band xxxiv., Heft 1-2, 1929. **W. Kinkel.** *Karl Vorländer zum Gedächtnis.* [The noted Kantian scholar died Dec. 6th, 1928.] **E. Utitz.** *Ueber Grundbegriffe der Kunstwissenschaft.* [Begins with a protest against the tyranny of æsthetics, whether abstract or psychological, over the theory of art (the latter being a direct study of the intrinsic properties of works of art) and then passes to a critical review of recent German theories of art. Too long for summary (64 pp.).] **G. Wernick.** *Ist der Begriff der Wahrheit definierbar?* [Definitions of truth are either realistic or methodological. Both types present acute difficulties, but the former is always presupposed and is therefore better warranted.] **E. Meyer.** *Sein und Sollen in der Wertphilosophie.* [Criticism of the Phenomenologists' treatment of value. The fact that values are *intended* as objective does not make them so. They are subjectively conditioned, by the needs of a personality, though this does not prejudice their validity for all mankind.] **T. K. Oesterreich.** *Das Problem der räumlichen und zeitlichen Kontiguität von Ursache und Wirkung.* [Finds that action at a distance and action after a temporal lapse are as logically possible as continuous action. For physics the case for spatial continuity of action depends upon the evidence for the existence of something like ether. Simultaneity of cause and effect is absurd, since it would make a causal *sequence* impossible; all the events of a chain would collapse into a single instant.] **E. Otto.** *Die Struktur der geistigen Welt.* **A. Nyman.** *Ueber das "Unbewusste".* [The notion of unconscious mental phenomena is either self-contradictory or incapable of clear exposition. It is, however, justifiable in that it is necessary to psychology as an explanatory science, for (*a*) the discontinuity of conscious life demands anyhow the interpolation of non-conscious causal links, and (*b*) if these links be regarded as purely cerebral, the task of explanation falls outside psychology, the acceptance as final of discontinuity in the mental sphere being tantamount to the admission that causality does not rule in this sphere. But the logical defect of the notion, together with the fact that only under the postulate of *mental* continuity is it required, favour the view that it is a useful scientific fiction rather than the unveiling of a reality.] **J. L. Snethlage.** *Der Behaviorismus.* [The behaviourists' attempt to reduce psychology to the study of externally observable behaviour is vain, for (*a*) "observation" is a notion as specifically mental, and therefore as problematic from Watson's point of view, as that of "consciousness"; (*b*) behaviour is not observable but only movements, sounds, etc. To treat these as behaviour is to bring them under a point of view, to regard them as indicative of unified activity on the part of the organism as a whole. "Behaviour" is as hypothetical, or as little so, as "consciousness". Such value as Behaviourism has lies in its evoking inquiry into the nature of incorporeal objects and into the principles of method appropriate to psychology.] **P. Menzer.** *Ein Handbuch und ein Lexicon der Pädagogik.*

Reviews. Communications (incl. obituary notice of Emil Sidler-Brunner, who died July 27th, 1928). Portraits of Vorländer and Sidler-Brunner. Supplementary Brochure no. 63: *Das Problem des Gegebenen*, by J. von Malottki.

ANNALEN DER PHILOSOPHIE. Band viii., Heft 1 and 2. May, 1929. **T. Vogel.** *Die empirischen Grundlagen des Determinismus und der apriori-Wahrscheinlichkeit in der Physik.* [A closely reasoned account of the respective extent and justification of the principles of uniform causality and probability in physics, in the light of recent investigation into intra-atomic structure.] **A. Haag.** *Zu Hugo Dinglers Lösung des Raum-problems.* [Criticism of Dingler's attempt to prove that non-Euclidean geometry has no applicability to physical inquiries, being a mere "cloud of numbers". The article, which turns chiefly on Dingler's definition of a plane, is for specialists rather than philosophers.] **G. Ledig.** *Zur Ordnungschau der Lust- und Unlustgefühle.* [It is in principle possible to reach an exhaustive or almost exhaustive list of the types of object that give us pleasure or unpleasure. Such a list would clearly be of great value to ethics and the social sciences; would contribute towards the epistemological foundation of these.] **R. Weinmann.** *Der Widersinn und die Ueberflüssigkeit der speziellen Relativitätstheorie.* [The special theory is a purely mathematical explanation, providing a formula which is arbitrary in the sense that no amount of observation or experiment would lead to it. Physical explanation is empirical and exclusively causal, using formulæ and equations only in so far as these have an assignable physical meaning. The special theory is arbitrary in the further sense that its radical relativity involves logical absurdities as well as physical impossibilities. To urge that this merely brings out the need for a new logic is futile, since the exponents of the theory both do and must explain and defend it in accordance with the principles of the customary logic.] **H. Rudy.** *Zum Begriff der biologischen Feldtheorie.* [Compares with the vitalism of Driesch the theory, put forward by the Russian Alexander Gurwitsch, of a biological "field" (analogous with physical field) as determinant of the development of the germ-cell.] Reviews.

Band viii., Heft 3. **K. Sapper.** *Die Minimumprinzipien der Mechanik.* [The principle of Least Action, fundamental in mechanics, is of interest to the philosopher because (*a*) it was arrived at by deduction from the supposition that the universe is ruled by omniscient wisdom, and (*b*) it shows that the path of a moving body is determined as much by its end as by its beginning. Does (*b*) really entitle us to interpret in terms of purpose? The author concludes that it does not, but admits that nevertheless (*a*) is the only theoretical ground from which, so far as we now know, it can be derived.] **K. W. Geisler.** *Die Möglichkeit eines neuen Realismus.* [A realism somewhat like that of the American "New Realists"—consciousness as the integration of objects, as a cross-section of these—except that it admits the possibility that objects have an inner nature which must remain unknowable. Developed through criticism of Rehmke and Bergson.] **C. Fries.** *Zur Psychologie des Egoismus.* **H. Rosenfeld.** *Das ethische Ziel.* [Defence of Spengler's emphasis on "wollen" instead of "sollen". Morality is neither a force nor an end, but a form, in the last analysis a limitation imposed by reason on our primitive impulses. "That is not moral which I pronounce good and seek after through natural desire, but that which I have to win against my desire."] Reviews. Supplementary brochure—*Die Abstufungen der Individualität*, by **J. K. von Hoesslin.**

Band viii., Heft 4 and 5, July 1929. **S. Klyce.** *Grundzüge einer nicht-dogmatischen Ethik.* [The problem of ethics is that of the One *v.* the Many. "Good is the consciousness of unity; for since outside the One there is nothing, it is clear that there would be nothing whatever good if *that* were not good." "The problem of responsibility or freedom of the will is solved when it is recognised that in the last analysis a man is the whole universe, that in the essential sense nothing else exists to determine him." A logic to support this equation of functional part with whole is dogmatically outlined.] **W. Dubislav.** *Zur Philosophie der Mathematik und Naturwissenschaft.* [Attempts to demarcate the spheres of the philosophy of mathematics and the philosophy of nature, and to justify them against those who would reduce philosophy to moral edification and those who will admit no problems outside of positive or exact science.] **F. Bülow.** *Zur Philosophie des Einkommens.* [Anti-capitalist examination of various conceptions of political economy, with reference to the view of society each involves.] **W. Koppelmann.** *Muss sich die Logik nach der Mathematik, oder die Mathematik nach der Logik richten?* [Mathematics is too faulty to be erected as the standard for Logic. (1) The whole doctrine of negative numbers is absurd; *e.g.*, the ruling that the product of two negative numbers is a positive one cannot be honestly applied to concrete cases. (2) Concepts incapable of being represented in intuition cannot reflect the intuited physical world. (3) The most rigorous deduction from definitions that are arbitrary gives no title to *truth*.] Reviews.

Heft 6, Sept., 1929. *Obituary notice of Joseph Petzoldt.* **P. Hertz.** *Ueber Axiomensysteme beliebiger Satzsysteme.* [Address before the German Mathematical Association on the problem of independent systems of axioms.] **O. Bunnemann.** *Kausalitätsgesetz und Willensfreiheit.* [As in biology and psychology, so too in physics, we need to introduce alongside mechanical causation an inner motivation: *e.g.*, although change of direction may be explained mechanically, an original direction is by physicists either postulated or accepted as a mere fact.] Reviews.

RIVISTA DI FILOSOFIA NEO-SCOLASTICA (May-Aug., 1927). **E. Chiocchetti.** *Saggi su G. B. Vico.* [Two fragments of a longer work on V.'s religious and moral views; claims to refute the interpretation of V.'s thought given by Croce, Gentile and their disciples.] **P. Rotta.** *Di una recente interpretazione dell "Amore" nel Simposio Platonico.* [Criticises Calogero's "actualistic" interpretation of Ἔρως as an activity whose value consists solely in its own exercise.] **F. Olgiati.** *Il concetto di sostanza.* [Maintains that the true concept of substance can be reached only by admitting "being" as ontological reality and by accepting St. Thomas's doctrine of abstraction. Illustrates this view by showing the inadequacy of the treatment of substance in Locke, Berkeley, Hume, Taine, Mill, Bergson.] **C. Mazzantini.** *Realtà ed intelligenza.* [Continuation of article in previous number.] **V. Sinistrero.** *L'unione dell' anima intellettiva con il corpo secondo A. di Hales.* [A summary of Alexander of Hales's doctrine on this point.] Notes, discussions, reviews.

IX.—NOTE.

THE YALE CONGRESS OF PSYCHOLOGY.

THE Ninth International Congress of Psychology at New Haven, Conn., lasted from the 1st to the 7th September, 1929, and was an unqualified success. Not only was it by far the largest Congress ever assembled, with a registration amounting to 1050, of whom slightly over 100 were foreigners, but the organisation and hospitality were wellnigh perfect. Yale University not only housed the Congress in its dormitories and lecture halls, but turned its great new Memorial Hall partly into a smoking room and partly into a cafeteria for the bodily needs of the congressists, and charged nothing to those who wore the white badges of Foreign Members. This superb munificence was no doubt not unconnected with the fact that President Angell of Yale is himself a psychologist. He welcomed the Congress in an admirable speech, and told us also about the things Yale was doing for Psychology, such as the new Institute of Human Relations and Prof. Yerkes's pioneer Ape farm in Florida. In the sequel no doubt these two institutions were a little confused in the minds of some synthetic psychologists, and one heard inquiries as to how large would be the annual quota of apes that Prof. Yerkes would be permitted to import under the national origins clause of the new American immigration law!

As was to be expected with such large numbers, the programme was very crowded, and the participants in the sectional 'symposia' were cut down to eight minutes, which was a severe restriction upon wordiness and favoured nutshelling. But the result was by no means bad, although the discussions had often to be cut short. Among the evening lectures, given by the 'stars' of the Congress, those of Prof. Pavlov of Leningrad and Prof. Lashley of Chicago attracted most attention. The former spoke, with a vigour amazing in an octogenarian, in Russian, pausing at frequent intervals in order that Dr. Anrep might translate him into English, but did not say anything new; while the latter was generally considered to have produced the most memorable message delivered to the Congress, though he spoke, unfortunately, as if he thought that the eight-minute limit applied also to him.

In general the atmosphere of the Congress was amicable and pacific, perhaps because there was plenty of opportunity for conversation and exchange of views, perhaps because behaviourism was not much in evidence, perhaps merely because the weather was so hot. For during most of the Congress week the whole Atlantic seaboard was sweltering in the grip of a heat-wave in which the highest temperatures were recorded at Boston (96° F.), and at New Haven (96½° F.), the extra half degree being of course attributed to the activities of the Congress itself. So it was much easier to draw water than blood by an attack upon the most cherished convictions

of a perspiring psychologist, and the nearest approach to an 'incident' was when the President of the Congress, Prof. Cattell, flatly repudiated Prof. McDougall's very interesting report on the Lamarckian education of his white rats. Lastly, it should be mentioned that a gloom was cast on the proceedings at the outset by the news of the sudden death of Dr. Morton Prince, whom his many friends had looked forward to meeting at the Congress.

F. C. S. S.

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